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Another Big Drop in Crude Production

Highest production in 1931, week ending Aug. 8, average daily output 2,551,807 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

Further Curtailment Would Stop Refiners From Piling Up Excess Gasoline and Strengthen Situation

By Andrew M. Rowley

Lowest daily average crude oil production in the United States during 1931 was for week ending Sept. 5 with average output of 1,736,007 bbls.

Another very substantial decline in crude oil production during the past week strengthened the belief the Sunday shutdown movement will prevent any weakening in the crude oil price structure; permit the industry to maintain the advantages already gained; and pave the way for an upward readjustment in crude oil prices early this year. It is of the utmost importance that this curtailment be continued through this winter. If producers could restrict their output still further they automatically would force refiners to reduce runs to stills and prevent a piling up of gasoline stocks such as is the case at this time.

The refining industry has not co-operated fully in efforts to balance supply and demand. A further curtailment of crude oil production not only would bring the desired result but would tend to strengthen the crude oil market and hasten the return of better prices. The entire industry should so base its operations during this year as to insure far better prices than the distress quotations which prevailed during all of 1931. The foundation for price structures for 1932 is being laid at this time. Any improvement in the general situation must come through better prices. No business can continue long on a price level such as obtained last year.

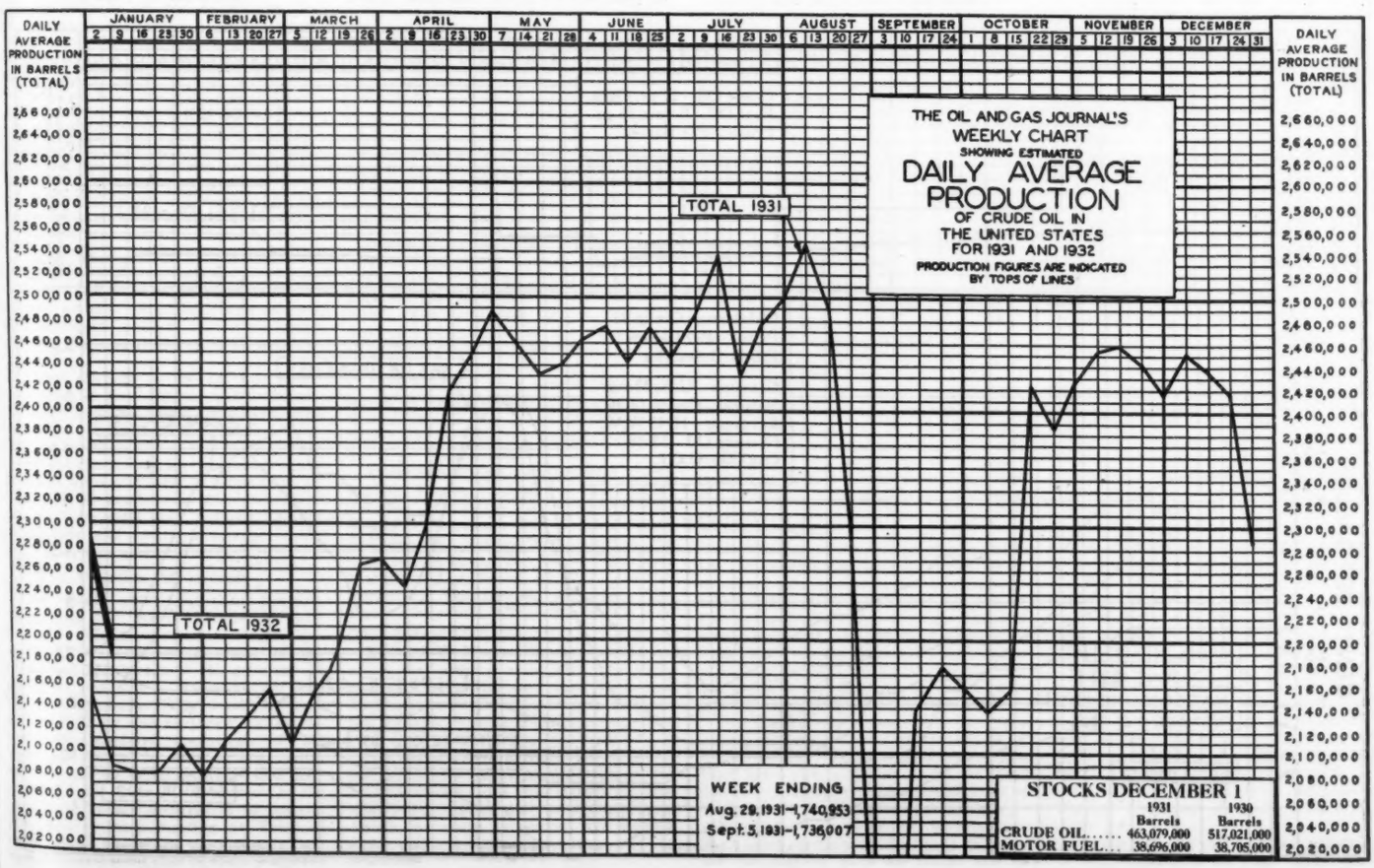
Experience of many years shows so conclusively that what is done during the winter months determines to such a great extent conditions which will prevail during a great part of each year, it is hard to understand why so many companies insist on piling up stocks which they must know will serve only to depress prices or postpone better quotations later. If the practice continues of basing crude oil prices on returns from gasoline sales, crude oil producers can control the situation by voluntarily restricting the output of their wells to a point where refiners will be unable to add to their stocks of gasoline.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for week ended January 2 and a comparison with the previous week follows:

	Jan. 2	Dec. 26
Oklahoma—		
Oklahoma City	137,185	171,215
Seminole-St. Louis	140,060	146 320
Remainder of State	215,590	216,845
Total Oklahoma	492,835	534,380
East Texas—		
Kilgore	92,087	104,435
Lathrop	101,070	105.056
Joiner	97,728	106,505
Total East Texas	290,885	315 996
West Texas	173,511	176,954
North Central Texas	74,095	78,960
Texas Panhandle	49,366	51,494
East Central Texas	50,942	50.317
Gulf Coast—Texas	108,625	110,205
Southwest Texas	57,194	60,695
Total State of Texas	804,618	844,621
North Louisiana	27,790	27,535
Arkansas	33,720	33,040
Kansas	102,940	105,120
Gulf Coast—Louisiana	29,850	29,720
Eastern	123,000	124 000
Rocky Mountain	89,358	92,274
California—		
Santa Fe Springs	64,000	63,000
Long Beach	76,000	76,750
Playa Del Rey	21,000	21,000
Elwood	15,000	15,000
Kettleman Hills	58,500	60,000
Remainder of State	262,500	262,250
Total California	497,000	498,000
Total United States	2,201,111	2,288,690

→ Decrease 87,579 Bbls. Daily ←



Small Advance in Gasoline Quotations

Less Distress Material Being Offered First Few Days of New Year. Kerosene and Furnace Oil Firm

By C. O. Willson

Although the spot demand for all grades of gasolines has not materially improved, a decreasing supply of the cheaper material brought a slightly better price situation in the Oklahoma (Group 3) market during the week. Offerings of low priced gasoline coming from refiners who were expecting lower crude oil quotations or who were forced to liquidate production currently to meet obligations, have decreased in volume and buyers are paying at least one-eighth cent per gallon more for all grades of refinery gasolines. The low of the U. S. Motor market in Oklahoma the first of the week to the trade was 2⅝ cents, the material at 2¾ and 2½ cents having been absorbed.

Natural gasolines were holding their own with more buying the latter part of last week. At least two of the larger manufacturers have withdrawn from the spot market, storing production in excess of requirements of regular customers. This decrease in open market supply is expected to aid the market and better prices are anticipated should additional buying develop within the next few days.

In the other products of the Oklahoma refinery list the usual report on shipments was "slow" although prices are being maintained. Kerosenes and furnace oil quotations continue firm in Oklahoma with contract orders taking the available supply. The seasonal slowness is apparent in all grades of lubricants.

Changes in Quotations

Starting with this issue, The Oil and Gas Journal is making important changes in market quotations published weekly. These changes in refinery quotations which became effective in the first issue of the new year, follow a survey in which refiners in all parts of the country gave the specifications on all the products refined at their plants. This survey showed that there is hardly a product in the refinery list in which important changes have not been made with the view of securing a commodity better suited to the requirements of the consuming trade.

In the weekly tables, some products have been dropped entirely and other products added with several changes in specifications. In brief, an attempt has been made to have the published quotations reflect the recent changes in refinery products. This attempt is of course limited by the fact that only those products can be quoted which are traded on the open market in sufficient volume so that quotations can be secured from week to week. The survey previously mentioned revealed the fact that a number of products are refined, which refiners either sell exclusively through their own marketing outlets or ship on contracts to regular customers.

Octane Ratings

The new schedules provide for quotations based on octane ratings in practically all refining areas. More and more attention is being paid by all classes of buyers to the octane ratings of their gasolines, reflecting the greater consumer demand for high antiknock gasolines. However, from the standpoint of open market quotations not as much attention is paid to octane ratings as in long-time contracts. The great bulk of the gasoline moved in the Mid-Continent on the open market is sold without any requirement as to octane rating. At the same time with rare exceptions this specification is important in long-time jobber contracts and intercompany transactions in which a refining department furnishes gasoline for company-owned stations. Practically every integrated company is steadily improving the octane rating of the gasoline sold through its own stations and the well-established jobbing concerns have also sensed this need and are requiring

(Continued on Page 87)

CHANGES IN QUOTATIONS

Effective in this issue, important changes have been made in the published quotations on refined products in several areas. Several products have been dropped and others added with changes in specifications in line with present market conditions. Should confusion result between buyers and sellers using published quotations as a basis for contracts, they are asked to advise the Journal's marketing department.

REFINED MARKET BAROMETER

Changes in the refinery gasoline markets over the past week were mixed. In some areas, there were fractional advances in quotations with similar declines in other sections indicating that there is yet no general trend in motor fuel markets. There was a better feeling in Mid-Continent and Middle West gasoline markets with less distress material being offered. Kerosene and furnace oil prices were generally reported steady with important seasonal increases in furnace oil demand in some areas due to the arrival of cold weather. Natural gasolines were unchanged both in California and the Mid-Continent. No special activity was reported in fuel oils and gas oils. Price decreases materialized in both the domestic and export markets on steam refined stocks and bright stocks. Trading in paraffin wax is dull.

Mid-Continent—Less distress gasoline being offered and prices slightly higher in areas from which the lowest quotations have come over the past several weeks. Kerosene and furnace oils firm. Heavy fuels and industrial gas oils slow. Natural gasoline prices unchanged. Routine demand for lubricants and wax.

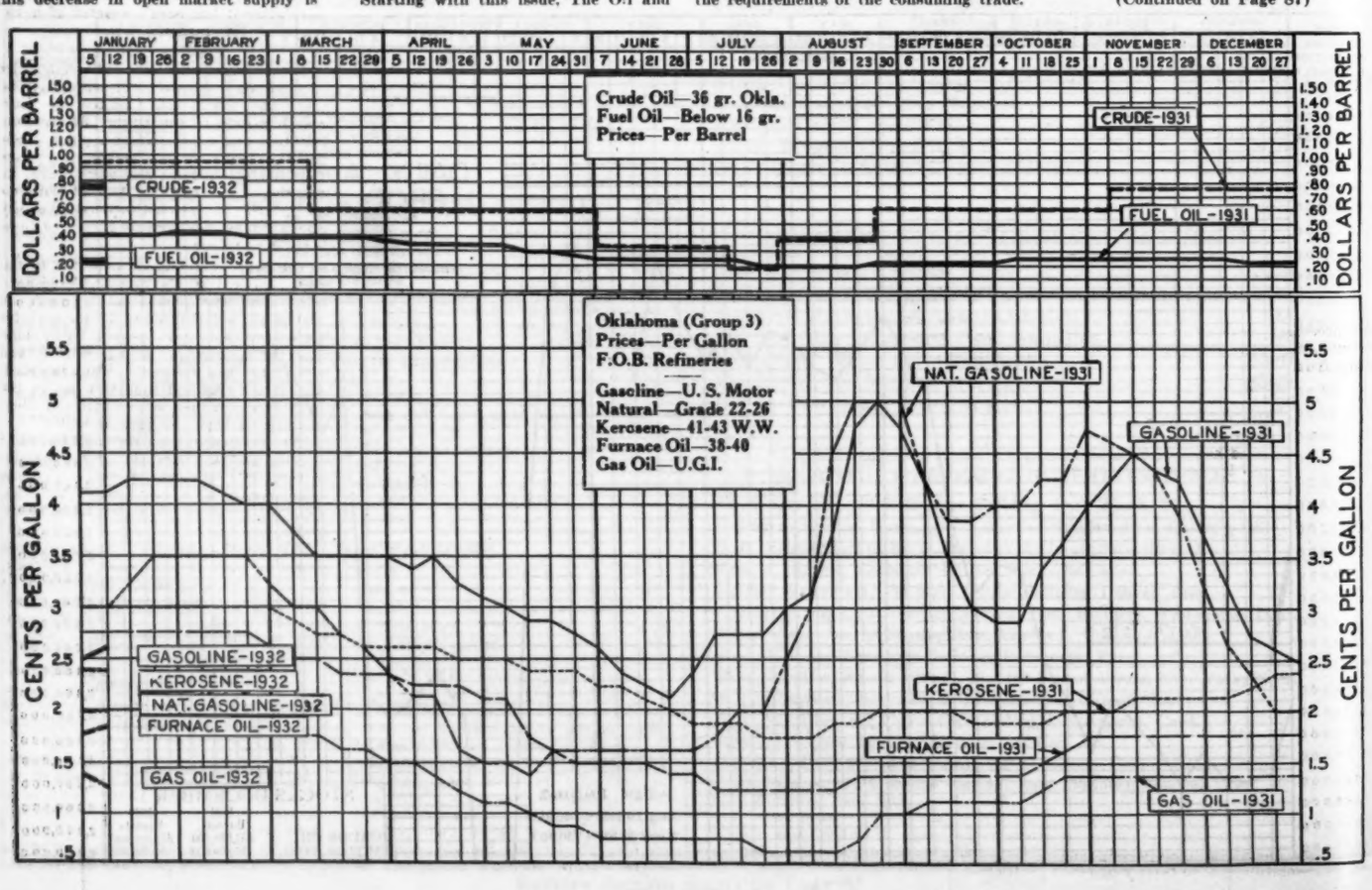
East Coast—Lower prices on gasoline of low octane rating. General reductions in steam refined stocks and bright stocks. Strong demand for furnace oil. Paraffin wax quiet.

Chicago—Better tone to gasoline market. Kerosene strong. Expect improvement in fuel oil and gas oil demand.

Pennsylvania—Gasoline slow but prices steady. Kerosene steady. Scattered reductions in neutral oils and cylinder stocks.

Gulf Coast—Market generally quiet. Anticipate improved crude oil situation to be reflected in prices on refined products.

California—Seasonal decline in demand for gasoline. Kerosene firm. Other products quiet.



Martial Law Case Before Federal Court

Answer of Governor Sterling of Texas Offered in Hearing by Three Judges at Houston. Jurisdiction Challenged

By Nell Williams

HOUSTON, Tex., Jan. 5.—The question of the constitutionality of martial law rule in the East Texas Field was the keynote of the opening testimony heard Monday and Tuesday in the suit of E. Constantin and J. D. Wrather who are seeking a federal injunction against enforcement of production restrictions against their properties. The case is being heard before a three-judge federal court in Houston, opening Monday. The Brock Lee Oil Co., one of the plaintiffs, has asked that its case be dismissed and as a company is not taking an active part in the hearing.

Tuesday's hearings were devoted to direct and cross examination of witnesses for the defense.

Defendants named in the case include Gov. Ross S. Sterling, members of the State Railroad Commission, James V. Allred, attorney general, Brig. Gen. Jacob F. Wolters, who is in command of the field under martial law, V. McDavid, Rusk County attorney, and Adj. Gen. W. W. Sterling in charge of the Texas Rangers.

The suit also seeks to recover approximately $100,000, claimed by plaintiffs as damages occasioned by the production restrictions under martial law which began August 17, 1931. The plaintiffs are seeking to prove that the governor, in declaring martial law, acted in accordance with an agreement, combination and conspiracy to boost the price of crude in the various fields of the country and not because of any justification as provided in the state constitution.

Arguments of Defense

Governor Sterling was placed on the stand Tuesday afternoon as the principal and last witness for the defendants. In his testimony he denied he had entered into a conspiracy with certain companies, as charged, to declare martial law in East Texas in order to hold down production with the ulterior motive of boosting prices, and stated his sole purpose was to preserve peace and order throughout the field. The governor was closely questioned by the plaintiffs and also by Judge J. C. Hutcheson, one of the three presiding judges, on what grounds his successive orders reducing the allowable production per well were issued.

Arguments in the case are expected to start Wednesday.

Martial law was defended Monday afternoon by Gov. Ross Sterling's counsel as a necessary measure to combat incipient riot and actual disregard of civil law in the field.

It was charged in the governor's answer that it was "common knowledge" dynamite and fire would have been used by citizens enraged by the "reckless" operations in the field had not the governor called out the militia last August to shut down all wells and later to allow them to flow only so much as in the opinion of experts they could flow without damage to the field and resultant damage to the royalty owners and producers.

Violation Threatened

E. F. Smith, chief counsel for the governor and for other defendants, Adj. Gen. W. W. Sterling and Brig. Gen. Jacob F. Wolters, commandant of the field, read statements of the governor in which it was said a Tyler banker had told him dynamite likely would be used in the field by the citizenry unless the assertedly wasteful operations of the wells was halted by martial law, statements that "40 or 50 petitions had been received from about 1,100 persons in the area prior to the declaration of martial law, that a mass meeting at Tyler of about 1,500 operators unanimously had passed a resolution that in their judgment only martial law would prevent violence and destruction."

The governor in a deposition likewise denied he had called out the militia for the purpose of oil conservation, but had determined upon that step because he was well advised violence in the field was imminent, due to the anger of royalty owners and others who felt themselves being defrauded by wasteful drilling and production.

The purpose of the deposition and statements was to show the governor acted in good faith in declaring martial law, and not to boost the price of oil, as charged by the plaintiffs.

Jurisdiction Challenged

During the morning session his lawyers had urged the court had no jurisdiction in any event, contending the right of a state's chief executive to declare and enforce martial law where he deemed it necessary was a constitutional discretionary one, not subject to judicial review.

The plaintiffs had contended the governor's action constituted confiscation of property without due process of law, and thus was violative of the federal Constitution. The court did not act on the matter of jurisdiction, deferring the question.

E. F. Smith, in his statement of the theory that the discretionary right to declare and enforce martial law rested solely with the governor, argued any review of that right by the court would be in effect an invasion of the executive's "great, arbitrary and extraordinary power" by the judiciary.

"Do you mean to say," asked Judge Hutcheson, "it is the governor's position he is stopping that oil production, not for the benefit of the industry, but because he is afraid people will begin shooting at each other?"

"That is the sworn pleading," replied the lawyer.

"Is that so?" rejoined the judge.

"I think the governor's motives are not particularly important in this case," Judge Hutcheson had remarked. "The question, it appears to me personally, is whether he is up there in East Texas to enforce the law or enforce anarchy."

Like Ship's Captain

Quoting from a court decision comparing the executive right of martial law to the all-powerful position of a ship captain on the high seas, Mr. Smith said the people could seek redress from any wrongful executive act during martial law by bringing suit. He added the suit would have to be brought after the expiration of martial law.

Once the attorney asked Judge Hutcheson to be careful in his reasoning not to confuse martial law with some other term and the judge replied:

"You should assume, counsel, the court has at least half as much intelligence on this subject as you have."

At another point in the argument, Judge Hutcheson had said: "Show me the legal precedent for the position a governor may violate the law—"

"I'm not going to be driven into that position," said Smith. "I say this petition here on trial does not give this court any grounds for jurisdiction."

The three state railroad commissioners and the attorney general, also defendants, but mainly because of their official positions, had other counsel than Smith, Paul Page, Jr., former Gov. Dan Moody, represented Governor Sterling, Brig. Gen. Jacob F. Wolters, in command of the field under martial law, and Adj. Gen. W. W. Sterling.

Texas Ouster Suit on Trial at Austin

General Denials Entered on Behalf of Oil Companies. Pasotex Corporation Files Its Answer. Constitutionality of Law Questioned

AUSTIN, Tex., Jan. 5.—Preliminary arguments in Attorney General James V. Allred's ouster suit against 15 oil companies and two petroleum marketing associations, in which the attorney general is asking maximum penalties aggregating $17,850,000 on a charge of violating the Texas antitrust law through use of a marketing code that had won the approval of the Federal Trade Commission, were postponed when the case was called Tuesday morning by District Judge Charles A. Wheeler at Austin until late Tuesday.

Attorneys representing the state corporations protested that no record of service upon the Standard Oil Co. of New York or the Standard Oil Co. of New Jersey was available. Judge Wheeler postponed arguments on the pleas until all returns could be checked up. At the time the case was called the court was without evidence that process had been served on either the Standard Oil Co. of New Jersey or the Standard Oil Co. of New York, or upon the Standard of California or Shell-Union.

Answers had been filed Tuesday morning by Pasotex Petroleum Corp., Sinclair Oil & Refining Co., Simms Oil Co., Magnolia Petroleum Co., Humble Oil & Refining Co., Texas Pacific Coal & Oil Co., Gulf Refining Co., Texas Petroleum Marketing Association, by W. C. Gaylor, president; Continental Oil Co., The Texas Companies, Cities Service Co. and Shell Petroleum Corp.

Edward T. Moore filed a response denying that service upon him was sufficient to serve the American Petroleum Institute, in that he is a director but not the secretary-treasurer or general manager of the institute.

The pleas attacked the Texas antitrust law as contrary to the constitution of the United States, and also protested misjoinder of parties and issues, and protested the cause of action was insufficient and the pleadings vague and insufficient.

Attorney General James V. Allred was in the courtroom. He is assisted in the prosecution by Assistant Attorney General Everett L. Looney, County Attorney Bryan Blalock of Travis County, Attorneys George Mendell, R. E. Cofer, John D. Cofer, Austin, and P. A. Martin, Wichita Falls.

Pasotex' Answer

The Pasotex corporation says the attorney general's petition is too vague and indefinite to permit of witnesses being called to make specific denials and that it is unable to ascertain what officer, agent or employe of the company committed the acts charged; therefore the petition is insufficient.

In the attack on the constitutionality of the antitrust law it is charged that they deny the equal protection of the law to all and that they seek to take property without due process of the law, as guaranteed by the federal constitution. In this connection farm and ranch products in the hands of the producers are exempt from the inhibitions of the antitrust law and the Texas co-operative marketing statute permits the formation of associations for collective marketing of products, while other lines of business cannot so operate.

Motion to quash was filed by the Pasotex corporation against the State's effort to attach stock of the corporation said to be owned by the Standard Oil Co. of California. The answer says Pasotex owes no money to the State, therefore an attachment cannot issue. The Standard of California owns 10,000 shares of Pasotex stock, it is admitted, but none of it is in Texas and the State cannot seize it.

Some of the defendants will file pleas of misjoinder of parties and of causes of action setting forth in that connection that suits for penalties must be filed separately against each defendant and that the causes of action against the foregin corporations to cancel their permits have been prematurely brought; that under the statute, such an action can be brought against a foreign corporation only after it has been convicted of a violation of the antitrust law.

Possible Defense

It is understood the oil companies through their counsel will set up special pleas the Texas law violates the fourteenth article of the United States Constitution and discriminates against them, for the Texas statute makes an exemption of the live stock and agricultural industries. In 1902 the federal supreme court held as unconstitutional the Illinois antitrust law because it carried these same exemptions.

The State, however, is expected to answer that in 1903 the present Texas antitrust law was passed minus such an exemption, but that when all the statutes were recodified several years later by some slip the exemption of agriculture and live stock was inserted. This insertion was in the criminal code and not in the civil statute, under which Attorney General Allred filed the present suit.

The oil companies point out for their defense that a direct act of the legislature in 1921 was enacted authorizing the establishment of a co-operative farm association to assist in maintaining better prices.

The question has been raised whether proration may be an issue in the suit, but Mr. Allred expressed the opinion it will not be pressed, conservation of oil and gas being the background of proration, in spite of the fact prices may be affected.

Gov. Ross S. Sterling expressed verbally here the opinion that it is "inconceivable" to him that the State should banish 15 of the biggest oil companies from doing business in its borders.

"Why, it isn't merely 15 corporations, but I am told that this proceeding affects 102 corporations doing business in Texas," Governor Sterling told newspaper men.

In the absence of a return showing

(Continued on Page 88)

Sinclair-Prairie Merger Very Near

Reported That H. R. Gallagher of Shell Oil Co. (California) May Head Consolidation. Companies Will Not Confirm

By James McIntyre

The announcement of the merger of the Sinclair Consolidated Oil Corp., the Prairie Oil & Gas Co. and the Prairie Pipe Line Co., and their various subsidiary companies, is expected to be made very soon. The announcement may come this week, following the meeting of the board of directors of the Sinclair Consolidated Oil Corp. in New York, slated for Wednesday, January 6.

It is reported that H. R. Gallagher, vice president of the Shell Oil Co. (California) will be president of the consolidated company, although this report cannot be confirmed.

An official statement issued on Monday by the various companies in the proposed merger, referring to the report published in Tulsa on Monday to the effect that the consolidation had been effected some time, even if it did not go into the business of purchasing crude.

H. F. Sinclair
Chairman of the Board, Sinclair Consolidated Oil Corp.

said that no statement is authorized and that such an announcement to have any authority must follow meetings of the respective boards, which meetings had not been held up to the issuance of the statement. Continuing, the statement, signed by H. F. Sinclair, W. S. Fitzpatrick and Clark Kountz, the officials designated by their respective companies to carry on the negotiations, said:

"As to the report that the headquarters of the proposed consolidation had been selected, this matter has not even been discussed. The question of the location of the general offices or of any department has not been determined, nor will such questions be considered until the consolidation is consummated and the organization of the new company, composed of representatives of our several corporations, has an opportunity to go into all the factors that would be involved."

Vast Resources

The merger of the Sinclair and Prairie companies will result in the building of one of the largest oil companies in the world, a completely integrated unit, doing business both in the United States and foreign lands. The combined crude oil production in November was close to 100,000 bbls. per day and the bonafide potential production of the combined companies was several times in excess of that. In addition the merged companies would own about 55,000,000 bbls. of high grade crude oil in steel storage, so that the consolidation would be able to supply its refineries with its own crude oil for

Sinclair Holdings

Sinclair Consolidated Oil Corp., the holding company for the Sinclair interests, through subsidiaries and affiliated companies, constitutes one of the largest independent integrated units in the industry.

The holding company was organized in 1919 as a consolidation of the Sinclair Oil & Refining Corp., Sinclair Gulf Corp., and Sinclair Consolidated Oil Corp. It owns all, or substantially all, capital stock of Sinclair Oil & Gas Co., Mexican Sinclair Petroleum Corp., Sinclair Central American Oil Corp., Sinclair Exploration Co., Sinclair Wyoming Oil Co., Compania Terminal de Lobos, Sinclair Navigation Co., Sinclair Refining Co., Sinclair Oil Co. of Louisiana, Union Petroleum Co., Sinclair Refining Co. of Louisiana, Pierce Petroleum Co., Sinclair Cuba Oil Co., Sinclair Coal Co., Sinclair Building Co., a number of foreign subsidiaries, and Sinclair Texas Pipe Line Co.

Late in 1928, Sinclair's holdings in French companies were exchanged for 70,000 shares of common stock of Vacuum Oil Co. In December of the same year the company acquired, through stock exchange, control of Venezuela Petroleum Co.

A Great Potential Production

It is difficult to measure the crude oil production of the Sinclair organization because so much of it is under proration. It would be safe to assume that the company, which is actually producing about 49,000 bbls. a day, could produce an average of 100,000 bbls. a day for several months. Its producing leases are all in territory where the crude oil has a high gasoline content. There is hardly a pool of importance in Oklahoma in which the Sinclair is not an active operator. Its Oklahoma City properties are considered among the most productive in that field if they were permitted to flow uninterruptedly. The company has 165 producing wells in the East Texas Field, the potentiality of which is enormous, and in addition enough undrilled acreage to considerably increase its possible production there. The company, under proration and curtailment orders, has an actual production in Oklahoma of about 24,000 bbls.; in Kansas, 4,000 bbls.; in Texas, 20,000 bbls.; and in Arkansas, 400 bbls.

Sinclair Refineries

The company owns nine active refineries located in East Chicago, Ind.; Coffeyville and Kansas City, Kans.; Wellsville, N. Y.; Sand Springs, Okla.; Marcus Hook, Pa.; Houston and Fort Worth, Tex., and Meraux, La. The following is a list of plants of the company:

	Daily crude capacity bbls.	Daily cracking capacity bbls.
Sinclair Refining Co.:		
East Chicago, Ind.	40,000	35,000
Coffeyville, Kans.	10,000	10,000
Kansas City, Kans. ...	8,000	10,000
Wellsville, N. Y.	20,000	....
Fort Worth, Tex.	8,000	.....
Gladewater, Tex.	2,500	....
Marcus Hook, Pa.	20,000	10,000
Houston, Tex.	50,000	30,000
Sand Springs, Okla. ...	8,000	4,000
Inactive Plants		
Muskogee, Okla.	1,200	
Texas City, Tex.	5,900	.....
Sinclair Ref. Co. of La.:		
Meraux, La.	30,000	Asphalt

The Sinclair Oil & Gas Co. owns several natural gasoline plants with a capacity of 403,000 gallons of natural gasoline per day. Most of these plants are located in Oklahoma oil fields.

The Sinclair Consolidated and subsidiaries own about 5,500 tank cars and approximately 100,000 deadweight tons of tank steamships.

The company owns direct marketing facilities throughout the eastern, southern and midwestern territories of the United States, and through foreign connections distributes throughout western Europe. A number of independent marketing companies have been absorbed within the past few years, and Sinclair products are distributed in Canada through a marketing agreement with Thayers, Ltd.

Sinclair's expansion into the Pacific Coast field has been looked for during the past several years, in line with the trend of diversification followed by many other large eastern and Mid-Continent companies which have firmly entrenched themselves in the California field.

Prairie an Old Company

Prairie Oil & Gas Co. is a major unit in the oil producing industry. The company was incorporated in Kansas in December, 1900. In compliance with the dissolution decree in 1911 the $17,997,400 capital stock of the company, owned by the Standard Oil Co. of New Jersey, was distributed to stockholders of the latter company.

In March, 1913, Prairie acquired the properties of the Hi-Grade Oil Co., the Northwestern Oil Co., and the Renfrew

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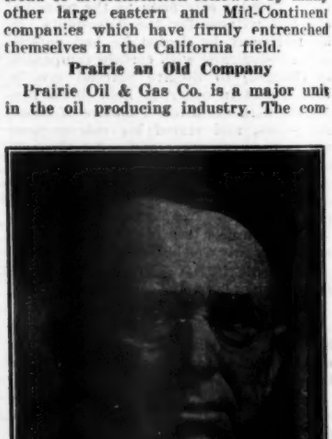
—Photo by Blank-Stoller, Inc.

H. R. Gallagher
Vice President of the Shell Oil Co. with Headquarters in San Francisco



W. S. Fitzpatrick
Chairman of Board, Prairie Oil & Gas Co.

Drilled in 1882, Kansas Discovery Gas Well Is Still Producing

* * * * * *

By Thomas F. Smiley

The first commercial gas well in Kansas is still producing after almost a half century of life.

This is just one of the interesting things brought to light while rummaging around in the early history of natural gas in the Sunflower State.

Another is that John J. Werner, who drilled the well, is living still, at the age of 81, in El Monte, Calif. He is one of the little handful of persons left who can tell from personal knowledge of the excitement the well created.

And few there are who could have told you that Peter Fertig, pioneer driller in the Kansas fields and for a time associated with Mr. Werner, still lives. The weight of his 90 years rests lightly upon this veteran, who was 18 when Colonel Drake made his epochal oil strike and who remembers that event. Clear of eye and brain and interested in the developments that have revolutionized the industry in which he once was an active figure, Mr. Fertig, with his wife, resides in Cherryvale, Kans.

* * * *

William M. Mills, through whose business vision and organizing ability the first natural gas distributing systems were established in municipalities of Kansas, died July 8, 1929, at the age of 78. Mrs. Mills, who shared his work and his responsibilities and whose counsel he valued highly, still resides in the fine home which they built in Osawatomie, Kans. She has preserved many relics of the early days of natural gas.

Had Bigger Place Than Petroleum

For many years natural gas occupied a bigger place than petroleum in Kansas. The No. 1 Westfall, which marked the beginning of natural gas developments in that State, is 1½ miles south and 1 mile east of Somerset, in Miami County. Gas from it is used today for heating, lighting and cooking by the present occupants of the old Westfall farm.

Mr. Werner, who organized the company which put down the well, had worked as a driller in Pennsylvania and was familiar with such oil field technique as had been developed up to that time. Leaving the oil country, he went to Belleville, Tex., and he was running a hotel there in 1881 when H. J. Foote, of Olathe, Kans., a guest, happened to pick up a history of Pennsylvania. Glancing through its pages, he was attracted by a picture of the Drake well and an account of the "oil signs" which had led Colonel Drake to select the particular location he chose on the bank of Oil Creek, near Titusville.

Mr. Foote, who never had seen an oil well, called Mr. Werner's attention to the account, with the remark that he had been told the same sort of surface indications which guided Colonel Drake were to be found in Indian Territory.

"Foote interested me in what he had heard on this subject," writes Mr. Werner.

Not long afterward Mr. Foote left Belleville with the understanding that he would communicate with the other man later. One day in February, 1882, Mr. Werner received a telegram asking him to meet Mr. Foote in Fort Scott, Kans. He did as requested. Both then went by rail to Baxter Springs, Kans., near the Indian Territory (now Oklahoma) line, where they hired a two-horse buggy and started out to hunt for oil indications.

Big Lease Deal—While It Lasted

The two prospectors spent several days in southeastern Kansas and northeastern Indian Territory, finding some oil signs which impressed Mr. Werner favorably. Oblivious of legal pitfalls, they entered upon a grandiose leasing program—nothing less than acquiring oil and gas rights on the government reservations of three Indian tribes, the Osages, Cherokees and Quapaws. They presented a picture of the wealth which they believed awaited both the Indians and themselves if a few gushers should be brought in. They received an avid hearing and the tribal chiefs promptly signed the 99-year leases which contained the customary clause giving one-eighth royalty to the lessors.

"I remember the name of only one of the chiefs," says Mr. Werner in telling of this ambitious transaction. "His name was Abrams. I remember about him because when I asked him for a lease he said, 'I tickle you and you tickle me.' We left there feeling good."

Still feeling good and quite willing to concede that they had consummated a big deal in a big way, the two returned to Fort Scott. In their hotel there they met some government officials connected with the Department of Indian Affairs, from whom they received the disconcerting information that their Indian leases were worth slightly less than a wooden drilling bit. One thing had been overlooked by both the Indians and the oil prospectors, namely, that Indian lands could not be leased or sold except with the approval of the U. S. Government.

Thoroughly deflated, the chagrined men considered their next move. In the course of conversations with others in the hotel they received information that surface indications of oil existed in the neighborhood of Paola, Miami County. The two forthwith boarded a train for that town, arriving in the evening and putting up at the old Grimshaw Hotel. On arising the next morning they found a foot of snow had fallen in the night, making travel on country roads impossible.

The two men improved the time by making acquaintances. Among persons whom they approached were James Wallace, owner of a drug store, and E. L. Mitchell, a devotee of horse racing. "The druggist," writes Mr. Werner, "had a heart as large as the courthouse." Mr. Mitchell, too, proved "a true friend," and in referring to this Kansas turfman whose loyalty and sense of honor withstood severe tests later on Mr. Werner adds, "I hope when he passed along his soul went into that everlasting life beyond the grave." Both these new acquaintances were to have an active part in subsequent developments of the Werner-Foote enterprise.

The snow melted rapidly and the next day Mr. Werner and Mr. Foote drove out to the farm of Abraham Westfall, 7 miles northeast of Paola, to investigate a so-called tar spring. This tar spring was a spot in the prairie grass, about as large as a bed quilt, always covered with a thick, oily substance. The men got a lease on the farm and stayed overnight in the farmhouse.

The next day Mr. Werner selected a location for a well and drove a stake to mark it, about 150 yards southeast of the tar spring. Returning to Paola, Mr. Werner and Mr. Foote succeeded in interesting a few other men and within a short time they had organized the Kansas Oil, Gas & Mining Co. Besides themselves the organization included six others, Mr. Mitchell, Mr. Wallace, H. M. McLachlin, E. M. Wickersham, James M. Briggs and Charles Kitchen. Eight shares of stock were issued, one share being allotted to each man.

Looked Like the End

Difficulties encountered in acquiring a drilling outfit threatened the young company with an untimely end. Authorized by his fellow stockholders to do so, Mr. Werner went to Bradford, Pa., where an oil field equipment house agreed to let him have the standard drilling tools needed for $1,200, provided he would guarantee payment of the freight both ways in the event that the oil company should fail to accept the tools upon their arrival in Kansas. He wired to his associates, telling them the situation, and he received in reply a telegram asking him to find somebody willing to guarantee payment of the freight. Besides a somewhat doubtful form of protection which involved putting up the eight shares of stock which actually had not been issued yet, there was an implied understanding that the guarantor should receive a share in the oil company in return for his willingness to put up the needed money. W. B. McCartney of Redrock, N. Y., who was in Bradford at the time, agreed to the terms and provided the guarantee required by the equipment company. This crisis passed, Mr. Werner and Mr. McCartney started for Kansas and the drilling outfit was shipped with the freight prepaid by Mr. McCartney.

The car containing the tools was sent direct to Somerset. Upon its arrival there the members of the company drove out to the lease to look things over. At this stage, with a bill of $1,200, plus freight, on their hands, some of the men, Mr. Werner says, "got cold feet." Adding to the gravity of the situation, it developed that there was no share of stock in the company to give to Mr. McCartney. It appeared that when Mr. Werner had made the arrangement with Mr. McCartney back in Bradford, Mr. McLachlin

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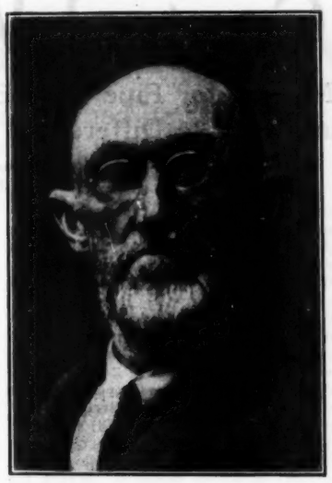
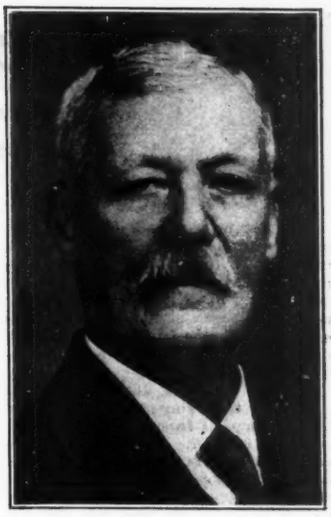
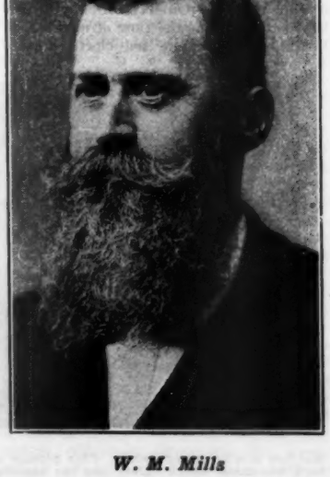


John J. Werner



Peter Fertig

Mr. Werner, 81, and Mr. Fertig, 90, are among the few pioneers of the early days of gas development in Kansas still living. Mr. Werner drilled the discovery well and Mr. Fertig was associated with him in contract drilling later.



W. M. Mills

Mrs. W. M. Mills

Remote Control Without Electricity

New Method for Pipe Line Booster Stations. Operation on Pressure-Volume Differential Control From Another Station

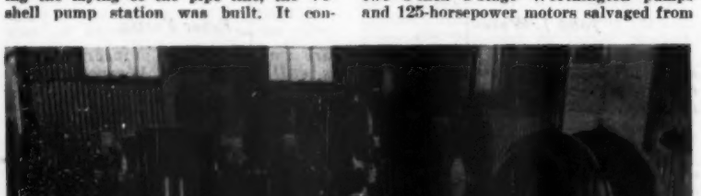
By Arthur Ayvazian
Engineer, Skelly Oil Co.

Operating on a pressure-volume differential controlled from another station, and entirely independent of wire communication, Skelly Oil Co.'s pipe line department has opened the way for another method of booster station remote control operation with the building and successful operation of its Burrton, Kans., booster station.

In June, 1930, an authorization was granted for the laying of 41 miles of pipe line to pump oil from the Voshell Field to Valley Center, Kans. This was a welded line consisting of 16 miles of 6-inch and 25 miles of 8-inch, buried to an average depth of about 30 inches. During the laying of the pipe line, the Voshell pump station was built. It contained one 3-inch 3-stage Worthington pump direct connected to a 125-horsepower electric motor. The delivery through this line was approximately 10,000 bbls. per 24 hours.

The Voshell station's pumping capacity was increased to 14,000 bbls. per 24 hours, in July, 1931. The following equipment was added to that originally installed: One 3-inch 3-stage Worthington pump direct connected to a 125-horsepower electric motor and one 5-inch single-stage Union centrifugal pump direct connected to a 30-horsepower motor, the latter pump being used as a booster pump.

It was again decided to increase the amount of crude oil transported by this pipe line, and in August, 1931, the delivery was to be increased to 19,000 bbls. per 24 hours. The report, prepared by the writer on August 18 and presented to the management for its consideration, was approved. In substance this recommendation contained the following changes: (1) Replacement of 5-inch single-stage pump with a 4-inch 2-stage Worthington pump connected to a 75-horsepower motor. (2) Replacement at Voshell station of two 3-inch 3-stage Worthington centrifugal pumps, equipped with nine 1-4 impellers and 125-horsepower motors with two 3-inch 3-stage Worthington centrifugal pumps using nine 1-2 impellers and driven by 150-horsepower electric motors. (3) Construction of the Burrton booster station, located 10.5 miles south of the Voshell station, in which would be located the two 3-inch 3-stage Worthington pumps and 125-horsepower motors salvaged from the Voshell station. The only change made in the salvaged equipment was a reduction in the size of the pump impellers, which were changed from 9¼ to 9 7/16-inch. Work was completed the latter part of September, 1931. Figures 1 and 2 give the flow diagrams of these two stations.



Inside view of the Burrton pump house. This picture shows two 3-inch Worthington pumps with 125-horsepower motors and two control boards.

Explanation of Operation

An explanation of the control and operation of the Burrton station is in order. Figure 2 illustrates the flow diagram of this station with its pumping and appurtenant controlling equipment. Valve numbered one remains closed at all times. This valve is opened only when it is necessary to clean this line of paraffin, which cleaning is done by means of a "go-devil" a tool specially constructed to pass through the line for the purpose of cleaning. Normally the line will handle 15,200 bbls. of oil by means of the two 3-inch pumps at the Voshell station. When these pumps are in operation the oil at Burrton passes through valve number two, check valves numbered four, five and six and thence through valve numbered three, into main 6-inch line. Should the crude requirements be greater than the capacity of the two main pumps at Voshell it is necessary to place the Burrton booster station in operation. When the crude oil is being forced through the line by means of the two pumps at the main pumping station, a pressure of 760 pounds per square inch exists at the discharge of the pumps, and this pressure has decreased to 420 pounds at Burrton, a distance of 10.5 miles from Voshell station. This loss in pressure is caused by friction in pumping the oil through the pipe.

To place the Burrton station in operation, the operator in charge at the main station, pinches the discharge gate on the pump. This reduces the flow of oil and reduces the pressure on the line until the gauge at the Voshell station records 475 pounds. At this pressure, the flow of oil will decrease to 11,500 bbls., and with a recorded pressure at the Burrton station of 245 pounds.

This picture shows intermediate header between the two pumps at Burrton station. This header connects the discharge of one pump to the intake of the other. In this picture is shown in detail the swedge next to the pump nozzle; gate valve saddles under each gate valve and a special grooved tee with its necessary couplings. This special tee is used to cut down friction losses. The gate saddles and couplings are used to support header piping and valves and to absorb vibration caused by operation of the pumps. In the background, and marked (x) is a louvre type ventilator set in wall to insure fresh air passing through the building, although the doors and windows are closed during cold or wet weather.

Mercoid Gauge

Referring to Figure 2, it will be noted that a mercoid pressure gauge, marked No. 8 and a flow meter, marked No. 9 will control the starting and stopping of the pumping equipment at Burrton. The mercoid pressure gauge is set to operate at two pressures: One 245-pound to kick in and two 335-pound to kick off. The flow meter records the flow of oil through the line and is connected electrically to the pumps by means of relays. This meter has two sets of contacts incorporated into the instruments; one set of contacts, known as high point setting. When the pointer on this meter records the passage of oil at the rate of 15,000 bbls. per 24 hours, contact is made at the high point setting. A second set of contacts is also incorporated into the instruments, at which point the meter should record the oil flowing at the rate of approximately 10,500 bbls. Pressure having been reduced at the Voshell station causes a like reaction at the Burrton station. This reduction in pressure affects the mercoid gauge by completing a part of an electrical circuit connecting the motors. The Brown flow meter, upon recording the passage of 15,000 bbls. of oil per 24 hours, will complete the electrical circuit by the action of the pointer in this instrument touching the high point contact. A flow of current results in the tripping of relays which are marked a, b, c, and d; the latter two are called "time delay relays" as their action is delayed for a certain period before the circuit is completed or closed. The "time delay" relays are set at different time intervals; one completing the circuit in 35 seconds and the other in 50 seconds. At the end of the 35 seconds the starter for motor No. 1 puts this motor into operation, and 15 seconds later the second motor starts. This difference in time is sufficient to allow the first motor to reach its normal speed of 3,500 revolutions per minute. This then permits the first motor to start deliver-

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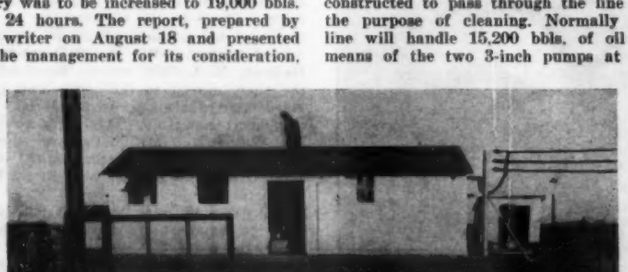
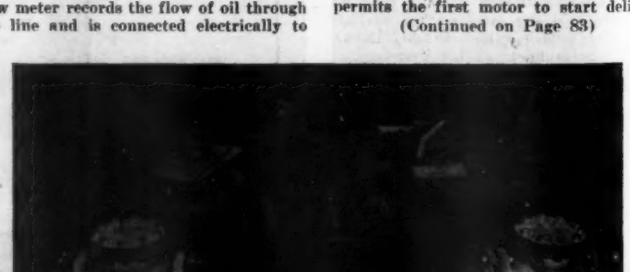


General view of the Burrton booster station. On the right of pump house building is seen top of sump tank with mercoid control on it. Three wires on right are power lines from transformers to main switch.



Burrton station pump header. This picture illustrates pump header with the necessary 4-inch horizontal check valves and the especially grooved tee with its necessary couplings.

Motors and Their Fuels Must Fit

Economic Balance Will Be Reached Between Cost of Gasoline and Efficiency With Which It Is Used

By Wheeler G. Lovell and John M. Campbell
General Motors Corp. Research Laboratories, Detroit, Mich.

Making gasolines to fit future automobiles, or automobiles to fit gasolines is really a single problem which requires co-operation of the engine manufacturer and gasoline refiner. Certain it is that fuels and cars will, of necessity, continue to fit together in the future, and the changes that occur in automotive design on one hand, and in the selection and treating of crudes, on the other hand, must be closely related to each other.

As C. F. Kettering has pointed out, the gasoline is as much a part of the automobile engine as the pistons. But, unlike the pistons, the fuel has not been fitted in the automobile factory. It is as if one should buy a car and say, "Oh, never mind the pistons—I'll get them down the street somewhere." "Never mind the fuel," is what has been said in the past; but that attitude is becoming more and more definitely out of date.

A lot of gasoline these automobiles take. It was some time ago that our grandfathers talked about their horses which ate their heads off once every two years or more frequently. In this respect, however, our automobiles possess a certain similarity to the horses.

Estimates indicate an average annual consumption of gasolines of from 500 to 600 gallons per vehicle, and should we take the average life of a car to be seven years, an automobile during its life would consume about 4,000 gallons of gasoline. Quite easily then, the automobile would eat its head off during its life. We buy an automobile and at the same time, knowingly or not, contract to buy an amount of gasoline about equal in cost. The remarkable thing, of course, is that a year's supply of fuel for a car represents from 50 to 100 separate purchases of gasoline which are made, in some cases, at points from one side of the continent to the other. Each gasoline should fit the automobile. Producers and refiners of petroleum are making 50 to 100 "spare parts" for each automobile every year—and every part should fit.

Essentials of an Automobile

It is not hard to see why the automobile design and the fuel are so intimately related, once we see what the automobile is. At first glance, of course, it is the most complicated machine we have ever had so universally distributed. The most complicated machine, to be sure, but because of the enormous amount of engineering study that has been given to it, the automobile has become a most satisfactory machine.

Essentially, though, the automobile is simply a chair-on-wheels-that-will-go. The chair itself should be comfortable, and perhaps even roomy, and protected from unpleasant weather, and of pleasing appearance. The wheels, and of course the roads which are almost a functional part of them, should be pleasing and comfortable and protect the occupant of the chair as he rides along. Proper functioning of this chair-on-wheels-that-will-go depends upon the fuel, and the "go" of the automobile is really there only because a suitable fuel for the engine is available.

The engine itself is essentially a space surrounded by metal, and in the space a certain amount of a certain kind of gasoline is mixed with air and burned. This space is distinguished by the fact that it is swept by the pistons which serve to convert the "temperature energy" of the gases into mechanical work. There are, of course, valves and spark plugs and crankshafts and so on; but the space swept by the pistons in where the gasoline goes, where the power comes from, and where the automobile and the fuel must be made to fit.

To improve the automobile a large number of things have been done to the chair and the wheels in order to make them more pleasing, and improvements have been made to the engine not only to make the driver more unconscious of it, but especially to put more "go" into it. In this "go," this performance, this acceleration, this get-away from the traffic light, improvements have been made which are in great demand by the buyers. But putting more power into conventional automobiles is becoming largely a matter of fitting the fuel and the engine together.

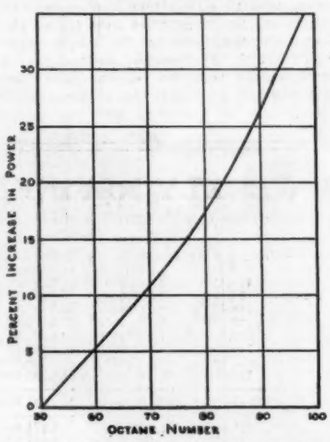


Figure 1—Data obtained on a single cylinder engine, at constant speed and varied compression ratio, showing the increase in power output possible when operating on fuels of different octane numbers, at border-line knock.

A number of things may be done to increase the power of an engine which may, for present purposes, be divided into two classes: First, those having to do with the mechanical relations of the piston-swept space, and, second, those involving changes in the utilization of that space, and which are more directly concerned with the fuel.

In considering, first, the mechanical relations of the space, it is clear that if the space swept by a piston in a single cycle is made greater, there will be more fuel burned, and there will be more power. This, of course, means a bigger engine, and there will be more space surrounded by metal and a greater weight. Another way of altering the relations to produce more power is to keep the size and stroke of the piston constant and to increase the number of strokes per minute or to use higher engine speeds. In this case there will be more swept space, more fuel and air burned per unit of time, and more power. These changes in engines, however, are not so intimately related to the fuels which are burned and, as a matter of fact, as will be seen later, over a period of years there has been little change in the amount of space swept by the pistons in moving automobiles a mile.

Another type of changes which may be made to increase the power of an engine are those changes involving the utilization of the piston-swept space. If more fuel and air is crowded into a unit of space, then there will be a greater power output. An increase in the amount of fuel-air charge, or an increase in volumetric efficiency, increases the power output of an engine. Another way to utilize the space better is to make more effective the use of a given amount of fuel and air put into the space, without change in the space or the amount of charge put into it. This may be accomplished by the use of higher compression ratios and results in an increase in thermal efficiency which is an advantage that may be added on to other changes which may be made.

These two types of changes in the utilization of the piston-swept space of an engine, which are concerned with changes in volumetric efficiency and compresion ratio involve directly the fuel which is burned. Such changes are, in fact, subject to direct limitation by the quality of the fuel which is burned.

Power and Octane Numbers

This limitation which the fuel places on the utilization of the piston-swept space is quite definite because of a quality of the fuel which is its tendency to knock, and which is now usually expressed as octane number.

The tendency of the fuel to knock limits, first, the amount of fuel-air charge which may be placed in the engine cylinder. It is a commonplace observation that when the throttle of an engine is opened, some fuels begin to knock, depending upon the particular engine and fuel. The knock may be a gentle "pink" or it may become quite loud and so violent that the power of the engine falls off. There are, in fact, instances of engines which have been completely wrecked by operation under severe knocking conditions. The power increase to be obtained with an engine by putting more air and fuel charge into it (whether by opening the throttle, or by changing the valves and inlet manifolds) is subject to a definite limitation because of the tendency of the fuel to knock as expressed by its octane number.

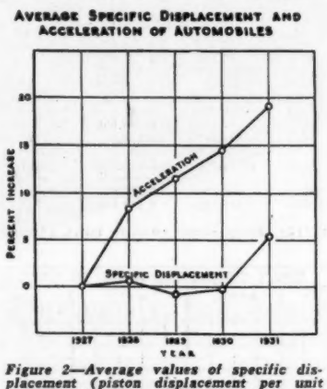


Figure 2—Average values of specific displacement (piston displacement per unit weight and distance of travel of the car) and acceleration (obtained from the time to accelerate from 10 to 35 miles per hour) for a period of five years, indicating changes which have taken place.

The octane number is also a direct limitation on the utilization of the fuel and air charge placed in the engine. As is well known, the power output of an engine may be increased by increasing its compression ratio. However, as the compression ratio is increased, some fuels begin to knock, and it is this limitation of knock which prevents getting more useful work from a unit volume of piston-swept combustion space.

The importance of this limitation is evident from the curve of Figure 1. Here the octane number of the fuel which will operate, in a certain engine at various compression ratios without knocking, is plotted against the percentage increase in power output of the engine at a constant speed. With a fuel of 50 octane number the engine produces an output taken as unity but, with an octane number of 100, about 35 per cent more power is obtained under the same conditions except that the compression ratio has been changed. The octane number of 100, of course, does not represent the upper limit since fuels are known whose octane numbers are far above 100. In other words, there are many fuels which have less tendency to knock than iso-octane.

It is to be emphasized that the increase in power output which accompanied the increase in compression is also accompanied by an increase in "economy" or thermal efficiency. Not only did the use of higher compression result in a higher power output, but also in a smaller fuel consumption per unit of power.

It is clear that a way of getting more power out of the fuel as well as out of the same amount of piston-swept combustion space is by the use of fuels of higher octane number.

Trends in Automotive Design

This relation between the automobile and the octane number of the fuel has resulted in certain changes in automobiles and certain changes in the oil-producing and refining business, and may result in more readjustments to produce more "go." The purchaser of an automobile has been demanding more and more from it in the way of performance. Since this may be directly related to the oil industry, it is interesting to see what these trends have been.

First, we can see what has happened in the past few years to the amount of piston-swept combustion space in automobiles and to the amount of power developed in that space. Frequently, the space is measured in cubic inches of piston displacement, but that is not a directly comparative figure since some engines run faster than others. Even taking the engine speed factor into account is not enough, since some cars weigh more than others. A more reliable figure is the piston displacement required to move a unit weight of car a unit distance, which may be computed from the specification measurements of the car. Such figures of the percentage increase of the average specific displacement for a large number of cars for the years from 1927 to 1931 are shown graphically in the lower curve of Figure 2. For a period of time there was substantially no change

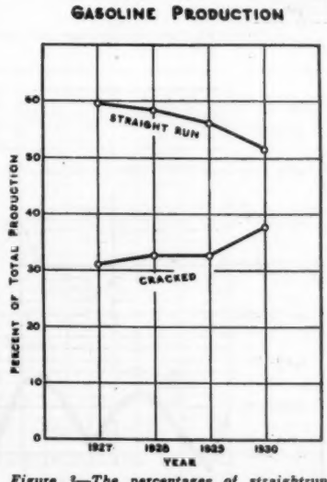


Figure 3—The percentages of straightrun and of cracked gasoline produced for a period of years, indicating changes which have taken place.

(Continued on Page 67)

Collier Bill Hoped as Aid to Oil Tariff

Would Use Tariff Commission Report as Lever. Democratic Policy Committee of Congress Clarifies Attitude

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Jan. 4.—The Joint Senate and House Democratic policy committee met today and clarified to some extent the legislative intentions of the Democratic majority in the House and the Democratic minority of the Senate on the subject of the tariff, the budget and the tariff commission. A bill introduced when the House met today by Chairman Collier of Mississippi, of the Ways and Means Committee, follows the recommendations of the policy committee.

In respect to the tariff the policy committee states, "It does not undertake at this time a further or complete definition of policy respecting tariffs," without any other direct reference to a tariff on oil or any other article.

However, there is a direct method embodied in the report and in the Collier Bill by which petroleum and products may be given tariff protection by means of the proposed enactment of what is known as the Simmons amendment of the last session of Congress altering the powers and duties of the tariff commission to authorize investigations initiated by the commission or on application of interested parties with a view to the modification of duties so as to equalize the difference in cost of production of domestic and foreign articles when produced in the principal competing country or countries, costs and conditions of production to include wages, cost of materials, transportation, containers and covers, packing, wholesale selling prices in the United States, advantage granted foreign producers by their governments and other applicable costs.

The Collier Bill makes it clear this provision relates to articles now on the free as well as the dutiable list. The tariff commission having completed its investigation of costs of delivering petroleum from foreign countries, representatives of the oil industry may make application for protective relief as soon as the Collier Bill becomes a law, if it is finally enacted. However, that bill after it passes the House, which seems assured at this time, must run the gauntlet of the Senate and the risk of a presidential veto. To lessen the danger of a presidential veto the Collier Bill does not require the tariff commission to report only to Congress and not to the President as was understood to be the intention of the policy committee but directs reports to be sent to the President and to Congress.

Any recommendation of the tariff commission would have to be embodied in a separate bill relating to only one article, which is intended to avoid log rolling by tying up other industries seeking protection with the industry upon which the tariff commission might make a report. So a recommendation for protection for petroleum could not be tied up with lumber, cement and sugar as was done in the last session of Congress if such tariff relief should be recommended by the commission. Hearings might or might not be held on such a bill by the Ways and Means Committee.

Although the tariff commission has made a report on differences of cost of

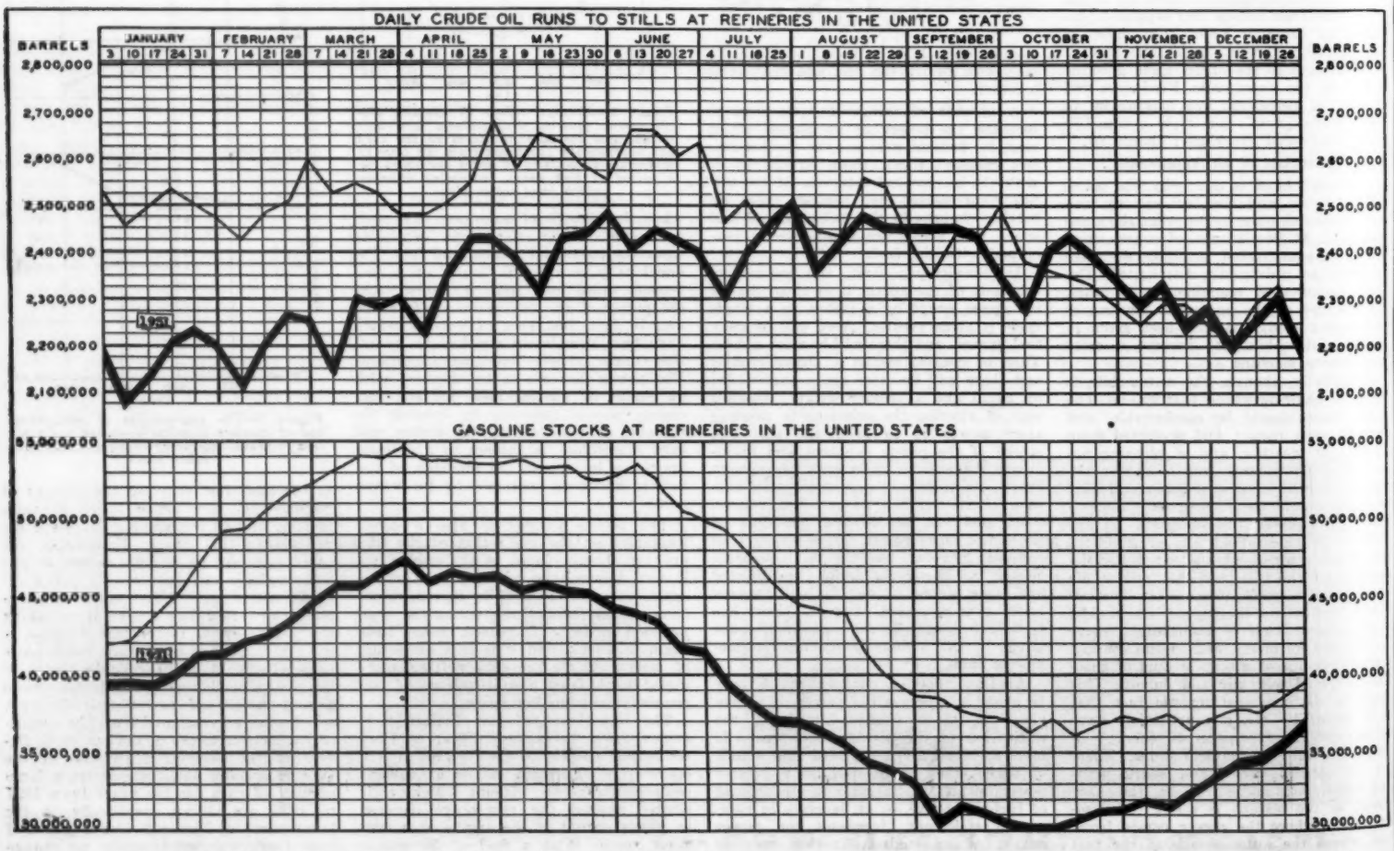
(Continued on Page 65)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending January 2:

	Week ending January 2				Week ending December 26, 1931				Week ending January 3, 1931			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	462,300	4,478,000	8,038,000	100.0	453,100	4,450,000	7,912,000	100.0	441,900	5,868,000	9,601,000
Appalachian	91.8	75,100	1,326,000	1,581,000	91.8	88,300	1,330,000	1,601,000	93 8	78,400	1,051,000	1,050,000
Indiana, Illinois, Kentucky	98.9	292,700	4,416,000	5,519,000	98.9	288,400	4,181,000	5,577,000	97.5	237,300	4,542,000	3,462,000
Oklahoma, Kansas, Missouri	89 6	210,300	3,311,000	4,279,000	89.6	203,200	3,505,000	4,365,000	89 4	206,300	2,854,000	4,120,000
Texas	91.3	520,300	7,967,000	11,504,000	91.3	562,400	7,573,000	11,873,000	91 9	469,400	6,912,000	10,846,000
Louisiana and Arkansas	98.9	168,600	1,347,000	4,343,000	98.0	174,900	1,262,000	4,070,000	98.3	130,300	1,526,000	2,270,000
Rocky Mountain	89.4	31,700	1,736,000	737,000	89.4	35,600	1,665,000	750,000	93 1	33,600	1,689,000	1,002,000
California	97.1	446,700	13,408,000	96,476,000	97.1	432,100	13,203,000	96,393,000	93.8	498,100	15,338,000	103,873,000
Total United States	95.2	2,207,700	37,989,000	132,477,000	95.2	2,238,000	37,199,000	132,541,000	95.1	2,095,300	39,780,000	136,224,000
Texas Gulf Coast	99.8	418,600	6,178,000	8,517,000	99.8	447,900	5,784,000	8,845,000	100 0	359,600	5,519,000	8,133,000
Louisiana Gulf Coast	100.0	115,700	1,219,000	3,515,000	100.0	116,700	1,100,000	3,168,000	100 0	99,100	1,290,000	1,351,000

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) gas and fuel oil stocks.



All data based on weekly reports of the American Petroleum Institute. Figures for last week not shown in graph but are included in above table.

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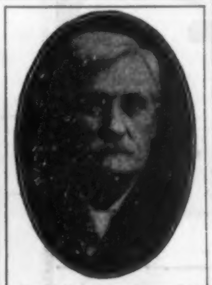

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THE BONE OR THE SHADOW

The refiner who thinks he is doing all right if he does not run more crude to stills than a year ago is all wrong.

The demand for gasoline and for other products is less, as estimated by the Economic Committees of the Federal Oil Conservation Board and the American Petroleum Institute, due largely to the decrease in exports.

The consumption of fuel oil, kerosene, lubricants and all other products is off, both domestic and foreign. The total demand for all petroleum products, it is calculated, is five per cent less than it was a year ago.

Do not be misled by data which show that domestic demand for gasoline is slightly higher than in 1930. The decline in exports more than offset this increase in domestic consumption.

The Bureau of Mines report for the first 11 months of 1931, just issued, shows domestic demand for motor fuel was 372,784,000 barrels, an increase of 1.9 per cent over the same period of 1930.

But this increase of 7,197,000 barrels in domestic consumption was more than offset by a decrease of 18,047,000 barrels in exports. That decrease in exports represented a decline of 29.5 per cent for the 11 months.

Taking into consideration both domestic and exports demand there was a decrease of 10,850,000 barrels or 2.5 per cent less than for the same period in 1930.

Basing opinion on the estimates of the Federal Oil Conservation Board and American Petroleum Institute committees it is not expected that this relative situation will be materially changed within the first 90 days of 1932.

Refiners must figure on a decline in the overall demand for their products, compared to last year, which will vary in different refining areas from 2 to 10 per cent.

In this connection it is also well to keep in mind that despite the depression we are still getting more gasoline for each barrel of crude oil.

During the first 11 months of 1931 the motor fuel production in the United States was 48.9 per cent of the crude oil run to stills at refineries. This motor fuel includes natural gasoline and a small quantity of benzol produced outside of refineries.

In the first 11 months of 1930 motor fuel production was 47.4 per cent of the crude run.

This increase of 1.5 per cent in the yield of motor fuel per barrel of crude oil run to stills may not appear very large at first glance but checked against refinery operations it means approximately 40,000 barrels daily less crude was necessary in 1931 to secure the same amount of gasoline, or 14,600,000 barrels less crude a year.

This emphasizes the fact that, due to the constant increase in refining efficiency, operations should be based, not on the quantity of raw material but rather upon the output in finished products.

Too many individual refiners overlook the fact that they have added from two to as high as ten per cent to their gasoline yield from crude oil over the past year when they determine whether or not they are keeping their supply of refined products in line with ready demand.

The fact that the refining division, during one of the worst price periods in the history of the industry, has nevertheless still improved its efficiency in operation, indicates that the industry as a whole, for the immediate future at least, must figure on the greater yield of finished gasoline taking care of at least any normal gain in demand.

Due to depressed conditions, the major companies particularly, but all of them for that matter, should pay careful attention to the demand situation.

The depression has hit some consuming areas more than others. The situation has been complicated in some sections by increased competition. The refiner who fails to discover this condition and to prepare for it in advance will have surplus material on hand which he will have to dump on some other section of the country.

The necessity of analysing the situation by sections, rather than overall, cannot be overemphasized. Certain sections during the next few months may show substantial decreases in domestic demand while other sections may be able to maintain at least last year's consumption or in some cases to substantially exceed it.

Failure to take these sectional conditions into sufficient account when shaping manufacturing operations leads to excess production and in many cases to the attempted disposal of that distress material in outside areas, with resulting price cutting and general demoralization of the market at large.

One angle to this situation is the building of additional crude lines and gasoline lines which have lowered the cost of products in some of the larger consuming sections thus enabling them to obtain a greater fraction of the business in that particular territory. It is useless for refiners who do not have these facilities to endeavor to regain this gallonage against competition which has such obvious advantages.

The American Petroleum Institute's reports show that there was an addition of 1,500,000 barrels of gasoline to stocks in the week ending December 19, 1,263,000 barrels in the week ending December 26, and 790,000 barrels in the week ending January 2.

It must be remembered that the smaller refiners, usually assumed to be most responsible for excess runs, are least equipped to store surplus products. If there is a large increase in stocks it must be looked for elsewhere, in the tanks of larger companies able to supply storage.

The craze for volume of sales which has been the curse of production in so many industries is not limited to the little fellows in any business. Gallonage as the goal of sales departments, with little respect for profits, leads to excess production which, in turn, has to be sold at greater sacrifice. Or overambitious production throws a heavy burden on the sales department leading likewise to bargain offers. Neither is in balance with the practical purpose of all business which is profitable returns.

One of the needs of this period of reconstruction is a return to sanity in appraising business—not how much but how good.

Those millions of barrels of gasoline so easily overproduced now may be found overhanging the market next spring when the main consuming season opens, keeping down prices to a distress level and repeating the disastrous experience of last year throughout the summer.

Refiners, big as well as small, should keep this constantly in mind and not drop the bone for the shadow.

From Kentucky to the Eastern Markets

ANOTHER major natural gas project — the Columbia line—Dresser coupled. This line, largest in the east, extends from the gas fields in Kentucky to Coatesville, Pa., a distance of approximately 467 miles, where it joins with other lines of the system to serve the great industrial and domestic markets along the Atlantic seaboard.

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DRESSER COUPLINGS Dominate!

Results From Cracking Light Oil Cuts

Gasoline, Naphtha, Kerosene and Distillate Fractions Processed to Secure High Octane Motor Fuels

By E. F. Nelson and Gustav Egloff
Universal Oil Products Co.

Charging stocks from paraffin Pennsylvania grade crude oil are known as among the most difficult oils to crack satisfactorily for high octane number gasoline. Yet it is from the cracking of Pennsylvania oils by the application of correct principles, that some of the most remarkable results have been accomplished.

The cracking of a 40 octane number straightrun Pennsylvania gasoline gave 83.7 per cent yield of a 76 octane number gasoline. A Pennsylvania straightrun naphtha of 30 octane number gave a yield of cracked gasoline of 84.4 per cent with an octane number of 76. The cracking of Pennsylvania straightrun kerosene gave 81.2 per cent yield of cracked gasoline of 75 octane number.

The following table shows the results from the commercial cracking at relatively low temperatures and pressures of Pennsylvania straightrun gasoline, naphtha and kerosene.

Pennsylvania cracking stock—	Gasoline	Naphtha	Kerosene
Bbls. cracked per day	2,709	2,926	2,789
Cracked gasoline, % of charge	83.7	84.4	81.2
Octane number of cracked gasoline	76	76	75
Flashed fuel oil residue, % of charge	5 4	4 8	8 5
Gas (cu. ft. per bbl.)	346	...	362
Gas and loss, %	10 9	10.8	10.7

Cracking Gasoline

The gasoline charged to the cracking process at the rate of 2,709 bbls. per day analyzed by the A.S.T.M. at 100 c.c. distillation method showed the following properties:

A.P.I. gravity	58 7
I.B.P., °F.	120.0
Per cent distilled over	°F.
10	200
20	230
30	252
40	270
50	289
60	305
70	330
80	364
90	426
Octane number	40

The cracked gasoline produced from conversion of the Pennsylvania gasoline showed the following properties:

A.P.I. gravity	68.5
I.B.P.	78
Per cent distilled over	°F.
10	132
20	158
30	182
40	200
50	216
60	228
70	242
80	256
90	275
Endpoint	297

The octane number of the cracked gasolines was 76, as determined by the Ethyl series 30 motor test.

Fuel Oil Residue

The fuel oil produced from cracking Pennsylvania gasoline had a low viscosity and low cold test. The properties of the flashed fuel oil residue were as follows:

A.P.I. gravity	3 0
Flashpoint, °F.	155
Firepoint, °F.	170
Saybolt Universal at 210° F.	50 sec.
Cold test	—20

Cracking Naphtha

The Pennsylvania 30 octane number straightrun naphtha was cracked under elevated temperature and pressure conditions, producing a 76 octane number gasoline. The naphtha was analyzed by the A.S.T.M. 100 c.c. distillation method and gave the following characteristics:

A.P.I. gravity	52.7
I.B.P., °F.	198
Per cent distilled over	°F.
10	252
20	307
30	322
40	335
50	348
60	363
70	380
80	406
90	452
Endpoint	586
Per cent recovered	98 5
Per cent loss	1 5
Octane number	30

The gasoline produced from cracking the straightrun naphtha analyzed as follows:

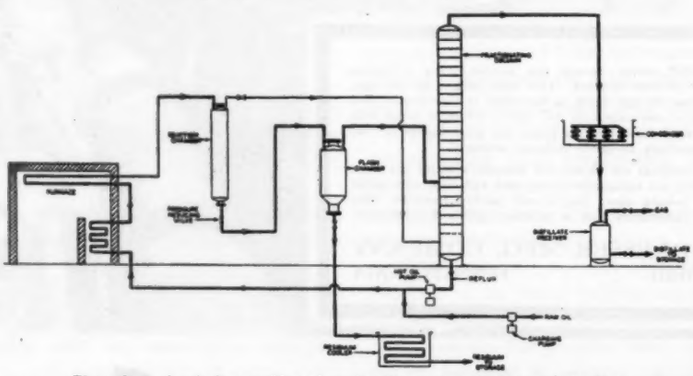
GASOLINE FROM CRACKING PENNSYLVANIA NAPHTHA

A.P.I. gravity	64 6
I.B.P., °F.	78

A.S.T.M. 100 c.c. Distillation

Per cent	°F.
20	168
50	243
90	313
Endpoint	331
Octane number	76

New type cracking unit in operation at Pennsylvania refinery.



Flow chart of unit for cracking of crude oil to secure high octane gasoline.

OCTANE NUMBER OF PRODUCTS

	A.P.I. gravity per cent of charge	Cracked gasoline per cent of charge	Cracked gasoline octane number	Flashed residuum per cent	Gas loss per cent
Mid-Continent kerosene	39.1	69 2	81	11.7	19 1
Mid-Continent gas oil	35.3	65 3	80	15 1	19 7
Mid-Continent fuel oil	24.3	56 4	76	37 6	6.0
Heavy Refugio crude	23 2	59 3	89	24 3	16.5
Heavy Refugio crude	23.2	53.0	91	31 7	15.3
West Texas kerosene distillate	36.4	65.4	89	18 2	27.4
Oklahoma City topped crude	30 6	66 5	74	27.8	5.7
California kerosene distillate	38 3	74 6	77	9 3	16 1
California stove distillate	34 5	69.0	78	15.6	15 4
California fuel oil	17.8	39 6	78	59 4	1 0
Santa Fe Springs crude oil	32 8	63.6	77	24.7	11 7
Kentucky fuel oil	23.4	55 1	76	44 0	4 9
Lost Soldier, Wyo., topped crude oil	24.0	56.1	80	34.4	9.5

The flashed fuel oil residue from cracking of Pennsylvania naphtha had a 4 A.P.I. gravity. The analytical data are tabulated as follows:

FUEL OIL RESIDUE

A.P.I. gravity	4.0
Flash, °F.	150
Fire, °F.	175
Saybolt Universal vis. at 210° F.	50 sec
Cold test	—15°F.

Cracking Kerosene

The Pennsylvania kerosene distillate which showed the following analysis by the A.S.T.M. 100 c.c. distillation method, cracked into a 75 octane number gasoline:

A.P.I. gravity	46.1
I.B.P., °F.	328
Per cent distilled over	°F
10	374
20	398
30	428
40	458
50	472
60	490
70	510
80	546
90	584
Endpoint	656

The following is a summary of the commercial results obtained from the cracking of Pennsylvania kerosene distillate

CRACKING KEROSENE DISTILLATE

Kerosene distillate, bbls. per run	39,675
Kerosene distillate, bbl. per day	2,789
Cracked gasoline, bbls. per run	32,246
Per cent of kerosene cracked	81.2
Fuel oil residue, bbls.	3,371
Per cent of kerosene cracked	8.5
Gas (cu. ft. per bbl.)	362
Gas and loss	10.3

The cracked gasoline derived from processing Pennsylvania kerosene had the following distillation analysis by the A.S.T.M. 100 c.c. distillation. The octane number of the cracked gasoline product was 75.

CRACKED GASOLINE

I.B.P., °F.	78
Per cent distilled over	°F.
10	136
20	176
30	210
40	244
50	270
60	292
70	310
80	334
90	356
Endpoint	366
Octane number	75

Cracking Stocks

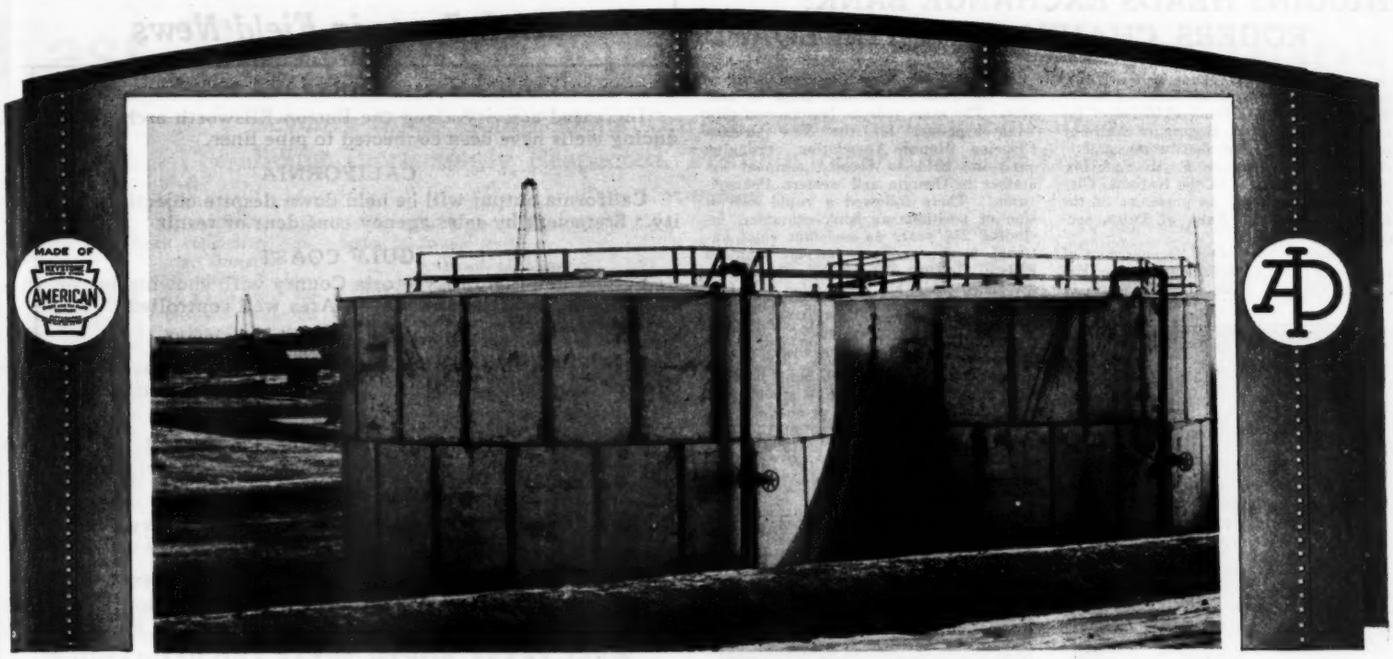
Kerosene from the Mid-Continent Field, gas oil and fuel oil were subjected to cracking under mild conditions of temperatures and pressures producing octane number gasolines between 76 and 81. Oklahoma City topped crude produced a 74 octane number motor fuel while a West Texas kerosene produced an 89 octane gasoline. Heavy Refugio crude oil also produced a 91 octane number gasoline.

California stove distillate, kerosene, fuel oil and crude oil produced octane number gasolines of 77 to 78. The accompanying table shows the product yields that have been obtained by cracking charging stocks from various fields in the United States.

Operation of Process

The method of operating the process to crack gasoline naphtha, or kerosene distillate, is illustrated in the flow chart of the unit. The gasoline, naphtha or kerosene charging stock is pumped through heat exchangers (not shown in the drawing). The charging stock, after heat exchange, passes through a coil placed within a furnace, together with

(Continued on Page 65)



Two 2,000-Bbl. A. P. I. Maloneys used by Globe Oil & Ref. Co. at Three Sands, Okla.

ADD TO YOUR PROFITS

The Money You Now Lose by Evaporation from Lease Tanks

By installing Maloney *Vapor-Pressure* Lease Tanks you can add to your net income the money value of the oil which otherwise would be wasted by breathing. These tanks hold ALL of your oil until it is delivered to the pipelines.

Our *Vapor-Pressure* Tanks are equipped with the most improved type of combination vacuum-pressure valves to restrict the movement of vapors. They are built of 12-gauge, or heavier, sheets of rust-resisting Keystone Copper Steel, amply tied and reinforced with 2″ angles, and coated with our special aluminum paint, which is made with a vehicle containing water-proof and alkali-proof Inhiburine.

These tanks insure maximum profit for operators because they eliminate evaporation waste and reduce replacement expense.

"Alone in Quality"

MALONEY TANK MFG. COMPANY

38 N. Peoria Ave., Tulsa, Okla.

Distributers at All Principal Petroleum Points Packed in Steel-Bound Crates for Export

HIGGINS HEADS EXCHANGE BANK; ROGERS, CHAIRMAN OF THE BOARD

Announcement was made Monday, January 4, by the board of directors of the Exchange National Bank of Tulsa of the election of Harry H. Rogers as chairman of the board of that institution, and of the election of Elmore F. Higgins, formerly vice president of the National City Bank of New York, as president of the Exchange National Bank of Tulsa, succeeding Mr. Rogers.

Mr. Rogers has served as chairman of the board and as president of the Exchange National Bank since the death of

Elmore F. Higgins

the late James J. McGraw, but asked to be relieved of the official duties of president in order to devote more of his time to outside interests, which have been making increasing demands upon his activities.

Mr. Higgins was born in Dallas, Tex., 48 years ago. He returned as a child to Montgomery, Ala., the home of his ancestors.

His banking experience covers a period of 35 years, beginning as a boy when he was employed by the Merchants & Planters National Bank of Montgomery and after going through several mergers, resigned from the First National Bank to join the Fourth National Bank of that city. The same year he became assistant bank examiner for the New Orleans Clearing House Association, resigning early in 1914 to become national examiner in Georgia and western Pennsylvania. There followed a rapid succession of positions as bank examiner, including 2½ years as assistant chief national bank examiner for the Chicago Federal Reserve district and which service ended with his resignation as chief national bank examiner for the Sixth Federal Reserve district at Atlanta in April, 1919, to go to the National Bank of Commerce of New York City as an assistant cashier, of which bank he subsequently was promoted to be second vice president and then vice president. He resigned the vice presidency of the National Bank of Commerce in 1926 to become a vice president of the Bank of America, New York. When the Bank

Harry H. Rogers

of America, N. A., was absorbed on November 28, 1931, by the National City Bank of New York he became a vice president of the latter institution, which position he resigned to come to Tulsa.

High Spots in Field News

KANSAS

Increased activity along the Barton-Ellsworth arch. Older producing wells have been connected to pipe lines.

CALIFORNIA

California output will be held down despite objections of minority. Statement by sales agency confident of result.

GULF COAST

Second new field in Victoria County with showing in two wildcats in other sections of county. Area well controlled.

OKLAHOMA

Calvin sand in 9-6 is yielding large wells at a shallow depth in Greater Seminole. Oklahoma City reducing production.

SOUTHWEST TEXAS

Offsets started in Pettus extension. Area still cut off from Damac discovery by dry hole. Dry hole in Darst extension.

ROCKY MOUNTAIN AREA

Prairie Colorado test taking core. Extension of Dry Creek Field, chief interest in Montana. Crystal Dome test may be abandoned.

NORTH LOUISIANA, ARKANSAS, MISSISSIPPI

Zwolle Field extended two miles. One completion flows 1,000 bbls. Increase in drilling expected. Two gas wells in Mississippi.

WEST TEXAS, NORTH TEXAS AND PANHANDLE

High water and bad roads hinder operations. Four locations in Ranger district and five in Wichita Falls area. Wildcat test in Concho County.

EAST TEXAS

There were 56 locations and 73 completions during week. Now 3,675 wells completed of which about 2,755 were shut down on Sunday. Test south of Joiner may extend production.

Late Fields

OKLAHOMA

The first large well of the new year completed in the Fish Pool was Jarvis & Holm's No. 1 Fish, NE cor. NE NW, Section 30-7-8, Seminole County, which made 4,453 bbls. of oil the first 24 hours after being drilled to a total depth of 3,005 feet. The well will be shut in for 16 days under the proration order. It is located in the south end of the pool.

Burke-Greis Oil Co.'s No. 1 Catlett, SW cor., Section 20-7-8, was also drilled deeper into the pay horizon to a total depth of 3,106 feet, where it made 600 bbls. of oil in seven hours, cutting 4 per cent.

An interesting wildcat location was announced by the Atlantic Oil Producing Co. and others in the NE cor. SW, Section 8-13-6, Lincoln County. The location is in the vicinity of tests that have found showings of oil and gas in different formations, but which were abandoned. The location was made after a seismograph survey.

The production from the Oklahoma City Field shows a decline during the first few days of the year. The daily gauges were: January 1, 103,107 bbls. from 130 wells; January 2, 129,198 bbls. from 124 wells; January 3, 152,657 bbls. from 157 wells; January 4, 118,593 bbls. from 147 wells, and January 5, 126,808 bbls. from 161 wells.

Carter Oil Co.'s No. 3 Campbell, NW cor. SE SW, Section 20-9-6, west of Seminole City, was averaging 50 bbls. of oil an hour from the Calvin sand at 2,700-22 feet and showing some water.

The total pipe line shipments from the Oklahoma City Field were 5,137,325 bbls.

Panther Oil Co.'s No. 1 Townlot, in Section 23-6-4, in southern Pottawatomie County, found water in the Simpson sand at 4,609 feet and will probably be abandoned.

GULF COAST

HOUSTON, Tex., Jan. 5.—Another link in the proving up of a continuous line of production connecting the north and east flank production of Barbers Hill was made with the completion of Nat Hunter Producing Co.'s No. 1 Morgan-Fitzgerald, which came in flowing an estimated 2,400 bbls. of pipe line oil daily from sand at a total depth of 5,214 feet. The well is approximately 700 feet from the nearest north flank producer and about 1,500 feet from the northernmost production of the east flank.

KANSAS

One of the wildcat areas in the southeastern part of Barton County, Kansas, was showing increased activity. Derby Oil Co.'s No. 1 Berscheidt, in Section 12-20-11w, cored a showing of oil at 3,289-3,302 feet, and was landing casing at 3,287 feet. The well offsets the discovery well, completed by Hilligoss and others in the same section. The Magnolia Petroleum Co.'s No. 1 R. Bayer, SW cor. NW, Section 7-20-10w, two locations east of the discovery well, is a rig building.

A new well was added to the Oswego lime area north of Augusta in Butler County. A. L. Skaer and others' No. 2 Holiday, in Section 24-27-4, found oil in the lime at 2,017-19 feet. Oil rose 1,200 feet in the hole in one hour. It swabbed an average of 17 bbls. an hour.

Rush County is developing into an important gas producing area, the fourth gas well completed was the Mid-Kansas Oil & Gas Co.'s No. 1 Mohr, C NW, Section 14-18-16w, which gauged 36,500,000 feet of gas a day from sand at 3,499-3,502 feet. The well extends the gas production and is located in comparatively new territory which has been proved over an area covering approximately 2 miles north and south. The Derby Oil Co. and Continental Oil Co.'s No. 1 Brack, C SW, Section 14-18-16w, Barton County, is the fifth test in the gas area and is rigging up.

TIDE WATER CHANGES

BRADFORD, Pa., Jan. 3.—The properties of the Associated Producers Co. in Pennsylvania (a subsidiary of Tide Water Oil Co) have been placed, effective January 1, 1932, under the supervision of W. S. Corwin of Robinson, Ill., who has had charge of the operations of the Associated Producers Co. in Illinois for some time past. This change relieves D. B. Tanner of this city, who has had charge of the Pennsylvania properties of this company for the past three years.

Mr. Corwin will continue to reside in Robinson, Ill., and will continue the supervision of the Illinois as well as the Pennsylvania operations.

The Bradford office of the Associated Producers Co. has been closed and a field office opened on its property at Cyclone, Pa.

MECHANICAL ENGINEERS MEET IN TULSA JAN. 15

The Mid-Continent section of the American Society of Mechanical Engineers will hold an all-day session in the ballroom of the University Club, Tulsa, beginning at 9 a.m., Friday, January 15, and continuing through the day. The meeting will be open to the general public. David Trax, Gypsy Oil Co., Tulsa, chairman of the section, will preside and the following papers are scheduled for presentation:

"Review of Report on Test of Steam Rotary Drilling Equipment," John T. Hayward, Barnsdall Oil Co., Tulsa. This is the report of the work done under the supervision of Prof. W. H. Carson, University of Oklahoma, Norman, Okla., in the Oklahoma City Field last summer for the A.S.M.E.

"Belting Practice in Oil Industry," H. H. Wright, Gypsy Oil Co., Tulsa.

"Rotary Drilling With Electric Motors," H. W. Manley, Barnsdall Oil Co., Tulsa. This is from the report of the subcommittee on electric drilling for the A.S.M.E.

Abstract of paper on "Stress in Sucker Rod Joints," by Emory Kemler, Gulf Research Laboratory, Pittsburgh, Pa.

"Design of Diesel Engines for Oil Industry," Hollis P. Porter, consulting engineer, Tulsa.

"Progress in Construction of Unfired Pressure Vessels," G. Raymond, engineer, Black, Sivalls & Bryson, Inc., Tulsa, Okla.

WILLIAM H. MEALY DEAD

William Henry Mealy, aged 70 years, died in Mexico City, Tuesday, January 5. He was associated with Edwin L. Doheny in the opening of oil fields in Mexico, and later managed the Mexican properties of the Waters-Pierce Oil Co.

DON BAXTER DEAD

Don Baxter, formerly a well known oil man in the Mid-Continent Field died recently in Los Angeles, Calif. The body was taken to Lima, Ohio, for burial.

East Texas Reports 56 New Locations

Seventy-three Completions During Week. Sunday Shutdown Being Increasingly Respected. Possible Joiner Extension South

By L. E. Bredberg

DALLAS, Tex., Jan. 4.—There were 2,379 wells shut down voluntarily Sunday, December 27, 66 others being shut down for physical reasons, making a total of 2,445 wells shut down for the day, around 1,200 less than the total number completed and on production at that time. On Sunday, January 3, there were 2,589 wells shut down, 166 wells did not report and may have been shut down, making a total of 2,755 wells shut down or believed shut down, showing that the Sunday shutdown movement has increased in popularity and effectiveness, more operators subscribing to the movement each week.

On January 2 there were 3,675 wells completed in the East Texas district, 3,522 of these reporting 354,614 bbls. production for the 24 hours ending at 7 a.m. that morning. There were 92 wells which reported no production while 61 others failed to report. Production for the previous 24 hours was 360,934 bbls. from 3,590 wells, pipe line runs for that day totaling 290,891 bbls., or 70,000 bbls. less than the day's production. However, pipe line runs for December 31 were 369,044 bbls., or 5,000 bbls. more than that day's production, showing that the pipe line runs fluctuate from day to day. Pipe line runs on January 3 amounted to 148,300 bbls., or almost 60,000 bbls. above production for that day. There were 3,685 wells completed on the latter date, but only 914 of them producing 89,840 bbls., a new low for the district while production on December 30 reached a new high, 370,251 bbls., the highest since the production of 100 bbls. per well was set on December 11. The new high was due to an extra 35 bbls. per day per well being allowed to those wells which were shut down on the Christmas holidays.

There were 392 wells completed in the district in December, 220 in Gregg, 120 in Rusk, 34 in Upshur and 18 in Smith County. Only 102 were completed in all the rest of the State, giving some idea of how East Texas has progressed in drilling activities during the year, and how active it remains at the present time. About 400 drilling permits were issued in the district during December.

There were 56 locations reported for the district this week, two of them in wildcat areas. There were 73 wells completed, three of these being in wildcat areas, the remainder located in the producing area. Locations and completions both increased over the previous week.

Work Over Smith County Test

The Sinclair Oil & Gas Co. is moving in equipment on its No. 1 Amanda Wiley in the James Jordan Survey, Smith County, and will work over this test in an effort to make a producer out of it. It was abandoned several months ago after making a small amount of oil and salt water, the company considering the test a failure. However, a test completed a short distance east of it a couple of weeks ago no doubt was responsible for the company reconsidering the possibilities of the Wiley test. It will be interesting to see whether a well drilled so far over into the salt water area, and which formerly looked like a failure, can be worked over and a small producer salvaged out of it. It is on the extreme western flank of production in the Joiner area, located over in Smith County. Total depth of the test was 3,894 feet, bottom of the hole being a considerable depth below the water level.

South of Joiner

The Texas Company's No. 1 Kersh in the Fowlkes Survey, a mile south of production in the Joiner area, southern Rusk County, is now standing with pipe cemented after sand was topped at minus 3,295 feet, and 4 feet of sand cored. Elevation is 323 feet. The test is looking sure for a producer, consequently will extend production and prove around 800 more acres good for production on this end of the pool. The Stanolind Oil & Gas Co. and Pure Oil Co. are also ready to core in their No. 1 Burton in the White Survey, about 1½ miles southeast of the Kersh test. This test will be closely watched to see what is developed by coring. This will be the first well completed on the Graham Lake block in which the Stanolind Oil & Gas Co. recently acquired a half interest from the Pure Oil Co.

Gregg County Surprise

Sinclair Oil & Gas Co.'s No. 1 Lawther in the M. Garrett Survey, on the eastern edge of the southern Gregg County area, offsetting a 40-bbl. per hour well of the Simplex Oil & Gas Co., has proved but a small producer, marking another defining point on this side of the field. It swabbed only 39 bbls. in 8 hours and will probably make only a pumper. Sand was topped at 3,558 feet. Total depth is 3,612 feet.

Pipes and Mack's No. 1 Alexander in the Sanchez Survey, one-quarter mile east of production in the Lathrop area, Gregg County, proved a surprise this week when it flowed 70 bbls. in 45 minutes through a 1-inch tubing choke. Total depth is 3,628 feet, the well having 8 feet of sand. The well is east of a small producer of the Tidal Oil Co. and also one-half mile southeast of a well owned by the Arkansas Fuel Oil Co., which well is standing with 500 feet of oil in hole and will not flow. This same condition has been found in the Kilgore area, where a good well was recently completed east of wells that had been pumping for some time.

Upshur County Paradox

Johnson and others' No. 1 Hargrove in the western part of the M. Mann Survey, Upshur County, is another paradox in the field for it is making a small amount of sulphur water though located high on structure, and bottom of hole standing at only minus 3,306 feet, top of sand at 3,303 feet. Shano Oil Co.'s No. 1 Doby, in the center of a 30-acre lease in the same survey, is also making some salt water. This well topped the sand at 3,282 feet and was completed at a total depth of minus 3,290 feet, above the water line, and proving alarming in this area, although the present amount of water is small.

An interesting location was made in southeastern Upshur County this week by J. W. Love and others on the Bain farm in the W. H. Williams Survey. It is approximately 3 miles northwest of Cranfill & Reynolds' No. 1 Rash in the Eubanks Survey, which test has been standing shut down for several weeks after testing some oil and showing for a producer. It is not known when the latter well will drill plug and make test.

More heavy rains have added to the deplorable conditions in the field, transportation of material and equipment being almost impossible even with mule team in many parts of the field, consequently actual drilling activities have dwindled during the past three weeks for this reason.

The deep test of the Pure Oil Co. in the north end of the Van Field, Van Zandt County, is now drilling below 6,025 feet, one of the deepest tests ever drilled in the East Central Texas or East Texas district. This test will be carried to the Trinity unless commercial production is encountered at a lesser depth.

There are 16 pumpers in the Van Field, these being located on the edges.

Daily average oil shipments from East Texas for the week ending December 28:

SHIPMENTS THROUGH MAIN TRUNK LINES

Company, size and location—	Bbls.
Atlantic P. L. Co., 10-in., Atreco	10,102
Arkansas P. L. Co., 8-in., Shreveport	11,909
Atlas P. L. Co., 8-in., Shreveport	3,182
Gulf P. L. Co., 2 and 8-in., Oklahoma	13,125
Gulf P. L. Co., 2 & 8-in., Port Arthur	7,364
Houston Oil Co., 8-in., Amigo	....
Humble P. L. Co., 2 & 10-in., Shreveport	24,094
Humble P. L. Co., 2 & 8-in., Todd	23,153
Liberty P. L. Co., 8-in., Rusk	1,712
Magnolia P. L. Co., 10-in., Center	9,449
Magnolia P. L. Co., 12-in., Corsicana	42,232
Shell P. L. Corp., 10-in., Houston	16,590
Sinclair P. L. Co., 12-in., Teague	24,055
Sun-Yount Lee P. L. Co., 10-in., Sun City	20,886
Texas P. L. Co., 10-in., Douglass	20,962
Texas Empire P. L. Co., 12-in., Port Arthur	42,496
Tidal Refining Co., 6-in., Carthage	4,432
Total	276,844

SHIPMENTS TO REFINERIES

Arrow Refining Co., Overton	S.D.
Beacon Refining Co., Henderson	400
Boone Refining Co., Arp	280
Central Refining Co., Friars Switch	S.D.
Constantin Refining Co., Overton	S.D.
Diamond Refining Co., Overton	139
East Texas Refining Co., Longview	5,425
East Texas Ref. Co., Friars Switch	3,410
Gladetex Refining Co., Gladewater	100
Gladewater Refining Co., Gladewater	260
Kilgore Refining Co., Kilgore	600
W. B. Mackey Ref. Co., Gladewater	420
Overton Refining Co., Overton	388
Petroleum Refractionating Co., Longview	S.D.
Sinclair Oil & Gas Co., Longview	492
Slack Refining Co., Camp Switch	S.D.
Southern Oil Ref. Co., Reed Switch	550
Taylor Refining Co., Tyler	2,328
Total	14,692

SHIPMENTS BY TANK CAR

Houston Oil Co. from Kilgore	1,201
Tyler Pipe Line Co. from Tyler	756
Total	1,957
Total daily average distribution	292,493
Total daily average production	290,885
Daily average from storage	1,608

EAST CENTRAL TEXAS WILDCATS

Week Ending January 4

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks:
C. R. Wilmuth et al's No. 1 N. B. Watson, 500 ft. from W line and 4,850 ft. from N of S line of survey in 8¾ of 129-ac. tract, M. Main Sur.	S.D. 800 ft.

BOWIE COUNTY

Logan and Elliott's No. 1 J. W. Smith, 9,600 ft. S and 2,500 ft. W of NE cor. of survey, Chas. Lewis Sur.	S.D. 4,503 ft.
W. S. Langford's No. 1 W. W. Whybark, 200 ft. from S and W of SW cor. of J. A. Dyer Sur.	S.D. 1,880 ft.
Lee Timberlake et al's No. 2 Julius N. Tidwell, 655 ft. from E and 2,510 ft. from S of survey in L. M. Rice Sur.	S.W. on D.S. test; S.D. 3,013 ft.

CHEROKEE COUNTY

Bridges and Candler's No. 1 Berryman, center of Berryman tract, H. Kimble Sur.	S.D. 1,000 ft.
Denman et al's No. 1 Mrs. Renfroe, 330 ft. N of S line and 330 ft. E of W line of farm, Uriah Moore Sur.	Derrick.
Harper and Perkinson's No. 1 J. T. Lowery, 650 ft. from N line, 150 ft. from W line of Blk. No. 5 on a 139.6-ac. tract, 4 miles W of Troupe, C. B. Jennings Sur.	Rigging up.
Wilson & Stubbs' No. 1 L. Robart, 450 ft. from S and 150 ft. from W of lease, J. B. Wolfin Sur.	Drlg. 2,035 ft.

DALLAS COUNTY

Long Creek Dev. Co.'s No. 1 T. J. Lupton, center of 160-ac. tract, 3½ miles N of Mesquite, J. Johnson Sur.	Derrick pattern.
Paris' No. 3 Wilkinson, 2,787 ft. from NW and 3,241 ft. from SW of John P. Anderson Sur.	T.D. 1,230 ft; S.D.
Joe Wilson's No. 1 fee, 600 ft. from N line and 600 ft. from W line of 1,500-ac. tr., Jno. Scroggs Sur.	S.D. 483 ft.

DELTA COUNTY

Worthington et al's No. 1 Pejernett, 776 ft. from S and 150 ft. from W in E. Chick Sur., 1½ miles W of Horton	S.D. 3,315 ft.

ELLIS COUNTY

Clark Brooks' No. 1 C. W. Golliday, 300 ft. from S line and 300 ft. from E line of tract and survey, John Bones Sur.	Drlg. 1,760 ft.
E. M. Roger's No. 1 John Lee Winn, 1,650 ft. from E and 150 ft. from S of Orland, Orlo Wheeler Sur.	S.D. 1,435 ft.
Worthen Pet. Co.'s No. 1 Cerf, 2½ miles NE of Ennis.	T.D. 2,264 ft.

FRANKLIN COUNTY

Tom Harper's No. 1 fee, 150 ft. from N line and 200 ft. from E line of 116-ac. tr., W. M. Dawson Sur.	Derrick.

GREGG COUNTY

Arkansas Fuel Oil Co.'s No. 1 C. L. Taylor, 295 ft. from N and S lines and 330 ft. from W line of E 21.94 acres of S 29.76 acres of 114.76-ac. tract, W. H. Castleberry Sur.	Derrick.
Atlantic & Pacific's No. 1 Ed Harvey, center of SE one-half of Blk 30, H. R. Hokit Sur.	Derrick.
Atlantic & Pacific's No. 1 B. Robinson, 330 ft. from N and W lines of 68-ac. tract, S. Davis Sur.	S.D. 3,536 ft.
Barnsdall Oil Co.'s No. 1 Grant Benson, 330 ft. from S and E lines of 56ac. tr., W. P. Chisum Sur.	Location.
Buchanan et al's No. 1 Geo. Ritchie, 120 ft. N and 15 ft. W of Monnell and Currie's No. 1 Church, Blk. No. 4, M. Dillard Sur.	Derrick.
Bramlette's No. 1 Geforth, 170 ft. due N of NW cor. of Bun-Hilburn-Lloyd lease in Chisum Sur.	T.D. 3,718 ft.
Bob et al's No. 1 T. L. Broy, 290 ft. from E and 1,640 ft. from S of H. A. Holdt Sur.	Derrick.

(Continued on Page 60)

COMPLETIONS IN EAST TEXAS

Fannin County

Lucas Development Co.'s No. 1 Ray Peeler, abandoned, total depth 700 feet. Ed Parsons' No. 1 Mrs. H. E. Morgan, dry and abandoned, total depth 3,957 feet.

Gregg County

E. J. Adams and others' No. 1 School Lot, top sand 3,498 feet, initial production 90 bbls. in three hours through three-fourths-inch tubing choke, total depth 3,510 feet. Amerada Petroleum Corp.'s No. 2 Killingsworth, top sand 3,594 feet, initial production 95 bbls. in 30 minutes through 1-inch tubing; No. 3 Tooke, top sand 3,503 feet, initial production 70 bbls. in 30 minutes through open tubing choke, total depth 3,529 feet;

No. 4 Tuttle, top sand 3,567 feet, initial production 80 bbls. in 30 minutes through 1-inch tubing choke, total depth 3,597 feet. Arkansas Fuel Oil Co.'s No. 4 Adrian-McCary, top sand 3,510 feet, initial production 100 bbls. in 30 minutes through tubing, total depth 3,530 feet; No. 4 Heston, top sand 3,630 feet, initial production 54 bbls. in 30 minutes through open tubing, total depth 3,640 feet. Atlantic and Wadley's No. 2 T. W. Lee, top sand 3,598 feet, initial production 40 bbls. per hour through taper tubing, total depth 3,643 feet. Ausley and Massingill's No. 2 A. Harris, top sand 3,566 feet, initial production 97 bbls. per hour through various chokes, total depth 3,573 feet.

Barnsdall and Sun Oil Co.'s No. 3 Bingham, top sand 3,513 feet, initial production 73 bbls. in 30 minutes through 1-inch tubing choke, total depth 3,559 feet. Cox and Hammon's No. 3 Lacy, top sand 3,551 feet, initial production 120 bbls. per hour through 1-inch tubing choke, total depth 3,563 feet. Duke and Mitchell's No. 1, top sand 3,622 feet, initial production 100 bbls. per hour through various chokes, total depth 3,652 feet.

East Texas Refining Co.'s No. 1 W. M. Fuller, top sand 3,674 feet, initial production 60 bbls. per day by heads, total depth 3,715 feet. Empire Gas & Fuel Oil Co.'s No. 1 J. C. Bumpass, top sand 3,506 feet, initial production 17 bbls. in 15 minutes through open tubing, total depth 3,570 feet. F. H. E. Oil Co.'s No. 1 R. Christian, top sand 3,595 feet, initial production 60 bbls. in 30 minutes through 1-inch tuing choke, total depth 3,625 feet. Gulf Production Co.'s No. 3 J. C. Judge, top sand 3,498 feet, initial production 125 bbls. per hour through three-fourths-inch tubing choke, total depth 3,520 feet. J. O. Hodges and others' No. 1 G. W. Ritchie, top sand 3,588 feet, initial production 66 bbls. per hour through open tubing, total depth 3,629 feet. D. F. Hughes' No. 1 S. G. Smith, top sand 3,515 feet, initial production no gauge, swabbing, total depth 3,563 feet.

Jim McMurray's No. 2 Snoddy, top sand 3,584 feet, initial production 112 bbls. per hour through 1-inch tubing choke, total depth 3,624 feet. Magnolia Petroleum Co.'s No. 1 Jim Allen, top sand 3,630 feet, initial production 132 bbls. per hour through three-fourths-inch tubing choke, total depth 3,648 feet; No. 14 J. W. Free, top sand 3,611 feet, initial production 120 bbls. per hour through three-fourths-inch tubing choke, total depth 3,626 feet. H. D. Morton's No. 1 Tom Hensley, top sand 3,524 feet, initial production 87 bbls. per hour through various chokes, total depth 3,593 feet.

Navarro Oil Co.'s No. 1 E. L. Walker, top sand 3,565 feet, initial production 65 bbls. for one-half hour through one-half-inch tubing choke, total depth 3,603 feet. B. A. Skipper's No. 1 D. C. Castleberry, top sand 3,606 feet, initial production 72 bbls. in 30 minutes through 1-inch tubing choke, total depth 3,640 feet. Superior Oil Co.'s No. 5 Ingram, top sand 3,508 feet, initial production 135 bbls. per hour through 1-inch tubing choke, total depth 3,577 feet.

Western State Oil & Royalty Co.'s No. 2 Bauknight, top sand 3,600 feet, initial production 45 bbls. in 30 minutes through open tubing, total depth 3,630 feet. Yount Lee Oil Co.'s No. 2 Floyd Jones, top sand 3,570 feet, initial production 103 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,591 feet. Gulf Production Co.'s No. 5 Willie Holt, top sand 3,570 feet, initial production 100 bbls. per hour through three-fourths inch tubing choke, total depth 3,580 feet; No. 7 Ben Watson, top sand 3,512 feet, initial production, no gauge, total depth 3,516 feet.

Magnolia Petroleum Co.'s No. 2 A. Hicks, top sand 3,699 feet, initial production 107 bbls. per hour through 1-inch tubing choke, total depth 3,702 feet; No. 3 A. Hicks, top sand 3,727 feet, initial production 132 bbls. per hour through three-fourths inch tubing choke, total depth 3,730 feet; No. 2 N. Radford, top sand 3,618 feet, initial production 155 bbls. per hour through three-fourths inch tubing choke, total depth 3,627 feet. Wright-Smith Oil Co.'s No. 1 Harris, top sand 3,530 feet, which was dry, oil sand 3,549-76 feet, initial production 100 bbls. per hour through open tubing and casing, total depth 3,576 feet. Cloptin & Lewis' No. 1 Southworth, top sand 3,543 feet, initial production 100 bbls. per hour through 1-inch tubing choke, total depth 3,550 feet.

Lamar County

Doyle & Jondeau's No. 1 J. Horn, dry and abandoned, total depth 2,683 feet.

Rusk County

Charles Carroll and Taylor's No. 1 J. C. Gipson, top sand 3,725 feet, initial production 225 bbls. per hour through open tubing, 4 per cent water, total depth 3,802 feet. Gulf Production Co.'s No. 3-B C. E. Christian, top sand 3,639 feet, initial production 104 bbls. per hour through three-fourths inch tubing choke, total depth 3,646 feet; No. 8-C Christian, top sand 3,658 feet, initial production 115 bbls. per hour through three-fourths inch tubing choke, total depth 3,666 feet.

Everts Drilling Co.'s No. 1 P. C. Warren, top sand 3,840 feet, initial production 100 bbls. per hour through three-fourths inch tubing choke, total depth 3,842 feet. Navarro Oil Co.'s No. 6 Brightwell, top sand 3,603 feet, initial production 100 bbls. per hour through 1¼-inch tubing choke, total depth 3,644 feet. Sun Oil Co.'s No. 9 J. R. Beall, top sand 3,646 feet, initial production 117 bbls. per hour through open tubing, total depth 3,663 feet. Weaver-Crim Oil Co.'s No. 1 Bean, top sand 3,677 feet, initial production 100 bbls. per day pinched through tubing, total depth 3,719 feet. P. M. Biddeson's No. 2 J. W. Wheelis, top sand 3,716 feet, initial production 24 bbls. per hour through open tubing, total depth 3,765 feet.

Coastal Drilling Co.'s No. 1 Giles, top sand 3,684 feet, initial production 95 bbls. per hour through open tubing, total depth 3,705 feet. Droppleman Development Co.'s No. 3 F. J. Cox, top sand 3,710 feet, initial production 77 bbls. per hour through 2-inch tubing choke, total depth 3,750 feet. Dunian & Holt's No. 1 R. A. Motley, top sand 3,814 feet, initial production 40 bbls. in 30 minutes through three-fourths inch tubing choke, total depth 3,816 feet. Golding & Murchinson's No. 3 Young, top sand 3,647 feet, initial production 110 bbls. per hour through 1-inch tubing choke, total depth 3,680 feet.

Gulf Production Co.'s No. 5-A W. P. Keeling, top sand 3,774 feet, initial production 125 bbls. per hour through 1½-inch tubing choke, total depth 3,794 feet. Humble Oil & Refining Co.'s No. 18 Kangerga, top sand 3,601 feet, initial production 100 bbls. per hour through three-fourths inch tubing choke, total depth 3,621 feet; No. 1 G. W. Wilson, top sand 3,588 feet, initial production 25 bbls. per hour through three-fourths inch tubing choke, total depth 3,698 feet. H. L. Hunt's No. 2 A. P. Finney, top sand 3,683 feet, initial production 80 bbls. per hour through open tubing, total depth 3,758 feet. H. L. Hunt, trustee's No. 1-C Joe Lee, top sand 3,751 feet, initial production 160 bbls. per hour through open tubing, total depth 3,758 feet. Imperator Oil Co.'s No. 1 Alford, top sand 3,767 feet, initial production 125 bbls. per hour through 1½-inch tubing choke, total depth 3,776 feet.

Lion Oil & Refining Co.'s No. 5-A Brooks, top sand 3,661 feet, initial production 70 bbls. per hour through open tubing, total depth 3,715 feet. L. McMurray's No. 1 A. Blackwell, top sand 3,650 feet, initial production 70 bbls. in 30 minutes through open tubing, total depth 3,675 feet. Mid-Kansas Oil & Gas Co.'s No. 5 M. M. Cross, top sand 3,666 feet, initial production 260 bbls. per hour through open tubing, total depth 3,671 feet. Smith and Torrans' No. 2 Torrans, top sand 3,629 feet, initial production 45 bbls. in 30 minutes through three-fourths-inch tubing choke, total depth 3,641 feet. Sunbeam Oil Co.'s No. 1 W. W. Brandon, top sand 3,812 feet, initial production 320 bbls. per hour through three-fourths-inch tubing choke, total depth 3,817 feet. Sun Oil Co.'s No. 6 O. W. Knight, top sand 3,627 feet, initial production 90 bbls. per hour through open tubing, total depth 3,646 feet.

Tex-Jersey Oil Co.'s No. 1-B W. P. Keeling, top sand 3,749 feet, initial production 100 bbls. per hour through three-eighths-inch tubing choke, total depth 3,804 feet. Tidal Oil Co.'s No. 2-A H. M. Hale, top sand 3,578 feet, initial production 57 bbls. per hour through 2½-inch tubing choke, total depth 3,700 feet. Grady Vaughn's No. 3 Alford, top sand 3,811 feet, initial production 85 bbls. per hour through three-fourths-inch tubing choke, total depth 3,817 feet. Ward Oil Co.'s No. 8 E. S. Thrash, top sand 3,747 feet, initial production 95 bbls. in 30 minutes through open tubing, total depth 3,802 feet. Woodley Petroleum Co.'s No. 4 McMillan, top sand 3,699 feet, initial production 75 bbls. per hour through open tubing, total depth 3,725 feet.

Smith County

C. B. Bunte's No. 1 Patterson, top sand 3,668 feet, initial production 20 bbls. in 15 minutes through open tubing, total depth 3,673 feet. Mid-Kansas Oil & Gas Co.'s No. 3 J. H. Sharp, top sand 3,654 feet, initial production 220 bbls. per hour through open tubing, total depth 3,659 feet. Taubert and McKee's No. 1 T. O. Wright, top sand 3,700 feet, initial production 135 bbls. per hour through open tubing, total depth 3,707 feet.

Upshur County

Humble Oil & Refining Co.'s No. 7 W. W. Holland, top sand 3,612, initial production 85 bbls. per hour through three-fourths-inch tubing choke, total depth 3,657 feet; No. 5 I. D. Smith, top sand 3,683 feet, initial production 80 bbls. per hour through three-fourths-inch tubing choke, total depth 3,689 feet. Magnolia Petroleum Co.'s No. 1 H. Fenton, top sand 3,764 feet, initial production 85 bbls. per hour through three-fourths-inch tubing choke, total depth 3,782 feet. Sabinas Oil Co.'s No. 2-C T. M. Collins, top sand 3,692 feet, initial production 120 bbls. per hour through 1-inch tubing choke, total depth 3,703 feet. Shasta Oil Co.'s No. 1 Hall, top Austin chalk 3,743 feet, base 3,777 feet, top sand 3,801 feet, drill stem test from 3,729-3,809 feet, tested salt water, dry and abandoned, total depth 3,840 feet.

LEGISLATIVE POWER TO REGULATE NOT EQUIVALENT TO CONFISCATION

Increased political demand for more regulation of public utilities and especially holding companies has focused attention upon the industry and there is much speculation as to the regulatory legislation that will be enacted in 1932, declares Page Golsan, vice president of Ford, Bacon & Davis, Inc., engineers. A host of investors in utility securities are carefully perusing the statements of national and state legislators for an inkling as to the future course of utility legislation, Mr. Golsan asserts in his discussion of this vital topic. He believes that too little has been said about the existing laws on utility regulation.

"The several states have, generally by legislative enactment, created public utility commissions, clothing them with the legislative power of utility regulation," he stated. "Therefore, rates fixed by commissions are to be made for the common good. The courts have said further that 'it is not to be inferred that this power of limitation or regulation is itself without limit. This power to regulate is not a power to destroy and limitation is not the equivalent of confiscation. Under pretense of regulating fares and freight, the state cannot require a railroad corporation to carry persons or property without reward; neither can it do that which in law amounts to taking of private property for public without just compensation or without due process of law'.

"The courts do not concern themselves with making rates or fixing any method for so doing. They do not pass upon the reasonableness of rates from the economic view of whether or not they are drawn for the 'common good'. They judge whether or not the constitution has been violated and whether or not the rate is reasonable from the viewpoint and test of confiscation of the utility property, something that may be entirely different from the common good. In short, the courts define the lower limit below which rates may not be set.

„When the question of a yardstick for the confiscation test of rates came before the Supreme Court it held 'that the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property'. There is no reason why this lower test limit should be taken as the broad guide as to the reasonableness for the common good. Commissions have recognized this fact, particularly those that have been the leaders in economic thought. Thus has been developed the 'fair rate base' for rate making. In the same way, rates of return of 7, 8 and 10 per cent have been used in the common good as against the mere interest rate test.

"In presenting rate cases it is suggested that not only full valuation, operating and replacement schedules be submitted but also that studies be made of the effect of the existing and proposed rate upon the common good as affecting both the public and the utility.

"To force down the price of natural gas to a point where other fuels must in turn cut their price is not in the common good. The communities served may be led to expect a benefit in the lower prices but its realization will be doubtful. The unduly displaced fuels, at lower prices, will be diverted to other communities whose plants compete with those using natural gas. The home industries will finally lose their advantage and may even find themselves in a worse predicament. The law of supply and demand cannot be disturbed without harmful consequences. Like water, it always seeks a level and when rates are economically wrong no one benefits. In fact, the community often loses. Its utility has less revenue and therefore less money to spend for improvements and less incentive to spend it. A starved utility certainly does not help a community. As to domestic and household rates, it may be much better for all concerned for the small householder to pay 25 cents a month more for gas and electricity and have a prosperous utility, capable of giving the best of service.

"The management of a utility is anxious to reduce rates where the service will be broadened and earnings increased. But no good can come of forcing down rates for no other reason than just reducing them. It would appear that public counsel should be asked the reason. In terms of common good, why a given rate reduction is being sought. Protection of the public because of savings of a few pennies a month to a consumer is in itself an unsound reason. The business depression clearly answers that. Living costs of today for these consumers are less than they have been for years and yet the prosperity is not here and present conditions are certainly not in the common good. A rate cut at this time, not warranted by economic reasons, is another step in the wrong direction. 'What the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth.'

"A sound economic study to arrive at the proper rate for the common good is of necessity a considerable job. Consumers must be classified and treated by groups. The future of the community and the relation of the utility to it must be carefully studied. An adequate rate schedule is the best protection of the utilities credit. Good service requires constant expansion which must be backed with sound credit. Good service requires an adequate wage. The cheap man seldom gets results and a starved utility does not live through times of distress."

Weather Impedes Work in West Texas

High Water and Bad Roads Hinder Operations in North Texas and Panhandle. Ranger Has Four Locations and Wichita Falls Five

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Jan. 4.—The Permian Basin registered another decrease in production this week, no doubt due to a further shut down on Sunday, more companies joining this movement each week. Production dropped from 176,954 bbls. per day as of last week to 173,511 bbls. this week, 21,150 bbls. per day above the daily allowable for the district.

Following is a list of West Texas fields with their potentials, number of wells completed and allowables for the current proration period, January 1 through January 31, 1932:

Field—	Wells	Potential	Allowable
Crane-Upton	589	54,220	16,700
Ector	80	25,383	4,661
Howard-Glasscock	518	70,112	26,000
Winkler	476	90,570	40,000
Yates	402	2,429,522	65,000
Total	2,065	2,669,807	152,361

Potential of the Yates Pool is given as taken on a 12-hour test. A 24-hour day's potential would double the potential shown.

Steel storage in West Texas dwindled considerably during 1931, approximately 5,000,000 bbls. of steel storage having been dismantled and moved to East Texas. Capacity in West Texas on January 1, 1931, was around 55,000,000 bbls., with 30,000,000 bbls. stock, and 25,000,000 bbls. room, withdrawals averaging almost 500,000 bbls. per month from the district during the year.

On January 1 capacity had been reduced to around 50,000,000 bbls. with 24,300,000 bbls. room.

The above tabulation of number of wells in the five main fields of West Texas shows those fields to have 1,620 wells less than have been drilled in East Texas during the past 14 months, and the daily allowable is but a little over a third of the allowable given that district.

Pipe line nominations in the Penn Pool, Ector County, dropped almost one-third for the month of January, 1932. Total nominations for this month are 4,661 bbls. compared with more than 6,300 bbls. last month, showing that purchasers in this district may elect to take less oil from the district during January and February, the two slack marketing months of the year.

Big Lake Operations

Group No. 1 Oil Corp. and Continental Oil Co. are now drilling at 8,975 feet on No. 3-B University, the deepest producer in the field and the second deepest producer in the world. For the past three days it produced an average of 2,287 bbls. of oil per day with 11,700,000 feet of gas. No. 1-B University is drilling at 8,077 feet. This well was the first deep well to be drilled in the field, but was recently killed to work over and deepen, sidetracking casing at 5,090 feet, from which depth it is being deepened. Former total depth was 8,525 feet.

The Mintex Oil Co. is rigging up on its wildcat test in Concho County on the Waring ranch in the T.&N.O. Survey and will deepen the test, which has been shut down at 267 feet for almost a year. W. C. Beesley of San Angelo started the test on a 9,000-acre block which he assembled, but this company recently took over the test to carry it on down.

There were no locations staked in West Texas during the week and no completions, the district being almost stagnant so far as wildcatting is concerned, and with but few wells active in the various producing areas. Ward County continues to be the most active, but with no outstanding tests drilling at the present time. The Shipley test on the western side of the county remains shut down.

WICHITA FALLS AND RANGER

There were four locations staked in the Ranger district this week, one in Brown, one in Comanche, one in Palo Pinto and one in Shackelford County, while the Wichita Falls district had five locations, three in Young, one in Archer and one in Montague County, both districts being comparatively quiet, high water and bad roads probably having considerable to do in cutting down activities.

Production dropped 4,662 bbls. per day this week in the Wichita Falls district, but decreased only 203 bbls. in the Ranger district. More advocates and followers of the Sunday shutdown movement were principally responsible for the decrease in the former district.

PANHANDLE

Production in the Panhandle district again decreased this week, falling from 51,494 to 49,366 bbls. per day, a daily decrease of 2,128 bbls., the one-seventh curtailment of production or Sunday shutdown accounting for the greater part of this decline.

The daily average production for this district in 1930 was 83,881 bbls., and the daily average for 1931 was 54,061 bbls., a difference of over 29,800 bbls. per day, showing that the district did its part in the curtailment program during the year. The Phillips Petroleum Co. curtailed heaviest, cutting its daily average of 1930 from 17,565 bbls. to 6,959 bbls. in 1931.

The Panhandle pipe line report for November shows steel storage capacity was 22,653,100 bbls. with 16,615,227 bbls. of oil in storage and 6,037,873 bbls. empty.

Production in the North Central Texas, or Wichita Falls district, also declined during 1931. In 1930 the district averaged 121,174 bbls. per day production while in 1931 it was down to 81,992 bbls. per day, a difference of almost 40,000 bbls. per day in the two years. The Texas company has been the largest producer in this district during the two years, averaging 9,431 bbls. per day in 1930 and 6,099 bbls. per day in 1931.

What is believed to be the longest string of 10-inch casing ever run in a Panhandle well was landed this week in Chambers and others' No. 1 Elizabeth Herring wildcat in Oldham County. The test is in Section 29, Block 3, G.C.&S.F. Survey. The casing was landed at 3,015 feet and the test is now drilling below 3,125 feet. The test is an interesting one, especially from a geological standpoint. Oldham County is one of the west edge counties of the Panhandle district.

There were only two completions reported during the week, the district being in a rather dormant state. Heavy snows, hard rains and general bad weather have slowed up activities during the past three weeks.

WEST TEXAS PRODUCTION

County—	No. wells	Prod.
Andrews	0	.....
Crane	377	15,513
Crockett	51	992
Ector	78	5,681
Fisher	79	810
Garza	2	30
Howard-Glasscock	544	22,984
Irion	9	35
Jones	89	1,212
Loving	46	3,181
Mitchell	111	1,497
Pecos	551	58,755
Reagan	355	23,433
Runnels	5	60
Scurry	5	.....
Upton	266	4,187
Taylor	266	60
Ward	79	3,768
Winkler	595	31,323
Total production this week		173,511
Total production last week		176,954
Decrease		3,443

COMPLETIONS IN NORTH TEXAS

Archer County

Waggoner and Gose's No. 1 Young Langford, dry and abandoned, total depth 2,300 feet. McCarthy and Richard's No. 1 Young, dry and abandoned, total depth 1,476 feet. W. B. Omohundro's No. 1 Turbeville, dry and abandoned, total depth 1,451 feet.

Baylor County

C. G. Hart and others' No. 1 Stevens, temporarily abandoned.

Wichita County

Wheeler and Brashear's No. 1 Parker and others, dry and abandoned, total depth 1,343 feet. George J. Proctor's

(Continued on Page 65)

WILDCAT OPERATIONS IN WEST TEXAS

Week Ending January 4

BREWSTER COUNTY

Company, well, farm name, section and block— Remarks:

Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur. ..... S.D. 1,935 ft.

E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur. ..... S.D. 1,302 ft.

Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 930 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur. ..... S.D. 2,900 ft.

Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles south Alpine ..... S.D. 1,750 ft.

COCHRAN COUNTY

Penn Oil Co.'s No. 1 Slaughter, C Labour No. 80 of League 129, Carson County School Lands ..... Shut down 4,917 ft.

CONCHO COUNTY

Beesley et al's No. 1 Waring Estate, 400 ft. from N and E Sec. 165, T.&N.O. Sur. ..... S.D.

Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 miles W of Paint Rock ..... S.D. 1,850 ft.

CRANE COUNTY

Gulf Prod. Co.'s No. 8 McElroy, 2,310 ft. from N and E of Sec. 196, Blk. F, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 2,565 ft.

CROCKETT COUNTY

Doleman & Moore's No. 1 Forner 2,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur. .... Spudded and S.D.

CULBERSON COUNTY

Kernrumpf et al's No. 1 Garren, 330 ft. S and W, Sec. 15, Blk. 79, Public School Land ..... S.D. 1,280 ft.

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, H.L.&R.R. Sur. ..... To resume drilling.

ECTOR COUNTY

Weekly Oil Corp. et al's No. 1 Cowden, 1,980 ft. from N and W Sec. 33, Blk. 43, Twp. 2s., T.&P. Sur. ..... Fishing 3,797 ft.; est. 500,000 ft. gas 3,795 ft.; increase 3,797 ft.; rigging up rotary.

R. F. Wurts' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW, Sec. 16, Blk. 46, Twp. 3s, G.M. M.Dr.&A. Sur. ..... S.D. 3,280 ft.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Bobadella, 1,356 ft. from S and E lines Sur. 344, S.P. No. 7,347 ..... Shut down 1,960 ft.

FISHER COUNTY

Cranfill & Reynolds' No. 1 George, 400 ft. from N and 380 ft. from E. Sec. 209, Blk. 1, B.B.&C. Sur. ..... Shut down 3,795 ft.

Cranfill & Reynolds' No. 1 Snipe, 330 ft. from N and W lines of Sec. 195, Blk. 1, B.B.&C. Sur. ..... Drlg. 2,925 ft.

(Continued on Page 70)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending January 4

CARSON COUNTY

Company, well, farm name, section and block— Remarks:

H. A. M. Oil Co.'s No. 2 Cooper, 330 ft. from S and E, Sec. 5, Blk. 9, I.&G.N. Sur. ..... Location.

Texhoma Natural Gas Co.'s No. 1 Burnett, C NE, Sec. 54, Blk. 4, L&G.N. Sur. ..... Drlg. 750 ft.

Texhoma Natural Gas Co.'s No. 1-G Gore, 1,330 ft. from S and 1,327 ft. from W, Sec. 42, Blk. 4, I.&G.N. Sur... Rig.

Texhoma Nat. Gas Co.'s No. 1-T McCoy, 1,257 ft. N, 1,309 ft. E line, Sec. 41, Blk. 4 ..... Drlg. 2,785 ft.

CHILDRESS COUNTY

C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands ..... T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur. ..... S.D. 2,508 ft.

Downey et al's No. 1 Beasly, SE cor. SW SE, Sec. 95, Blk. 15, H.&G.N. Sur, ... Rigging up.

DEAF SMITH COUNTY

Western Union Oil Co.'s No. 1 Farwell, C NW, Sec. 18-3n-2e ..... Drlg. 300 ft.

GRAY COUNTY

Back & Barber's No. 1 Back, 660 ft. from S and 330 ft. from W, Sec. 140, Blk. 25, H.&G.N. Sur. ..... S.D. 765 ft.

Hayes et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur. ..... Spudded and S.D.

Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur. ..... S.D. 2,720 ft.

Dixon Creek Oil Co.'s No. 2 Horner, 330 ft. from N and E, of Sec. 139, Blk. 3, I.&G.N. Sur. ..... T.D. 3,253 ft; cleaning out.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. .... S.D. 3,010 ft; cleaned up fishing job.

Graham et al's No. 1 Webb, 330 ft. from N and E of E½ NE, Sec. 62, Blk. 25, H.&G.N. Sur. ..... S.D. 2,671 ft.

Jewel Oil Co.'s No. 1 Meers, 330 ft. from S and W of NW SW, Sec. 126, Blk. 3, I.&G.N. Sur. ..... S.D. 2,060 ft.

Magnolia Pet. Co.'s No. 1 Arnold, 330 ft. from S and E, Sec. 149, Blk. 3, I.&G.N. Sur. ..... Cellar.

Mid-Kansas O. & G. Co.'s No. 1 Carpenter, 330 ft. from S and 990 ft. from W, Sec. 37, Blk. 25, H.&G.N. Sur.. Underreaming 2,030 ft.

Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 35, H.&G.N. Sur. ..... S.D. 2,619 ft.

Nipper et al's No. 1 Morse, 330 ft. from N and E, Sec. 1, Blk. 26, I.&G.N. Sur. ..... S.D. 2,365 ft.

Prairie O. & G. Co.'s No. 1 Morse, 417 ft. from N and 453 ft. from E, Sec. 4, Blk. 26, H.&G.N. Sur. ..... Drlg. by bit 2,571 ft.

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Pipe Line Construction News

PANHANDLE GAS SUIT CITES FIVE COMPANIES

AUSTIN, Tex., Jan. 4.—Petition was filed with the Railroad Commission Saturday by the firm of Hagy, Harrington & Marsh, Amarillo independent natural gas operators, asking permission to produce gas from its lease in the West Panhandle Field for casinghead gasoline and carbon black, charging a monopoly of outlet is being held by five major companies which refuse to buy gas from it and which are draining its leases. Firm members are L. R. Hagy, D. D. Harrington and Stanley Marsh. The petition will be set for hearing within 20 days.

Attorney General James V. Allred said after the petition had been filed that his department will continue inquiries into arbitrary prices and the question of monopoly of outlet, and intimated he is considering ouster proceedings in the event the charges made by Panhandle royalty owners to his department in its inquiry are substantiated.

His investigations will go on, Mr. Allred said, and if they establish that a combination of powerful foreign utilities is so holding down the price of gas as to deprive the State of correct tax collections, and if the foreign utilities are using a monopoly of outlet so as to oppress small producers and landowners, it will be a matter of concern to his department.

The petition of the independent gas firm asserts that it can find no market for its product, and that its leases in Carson and Moore Counties are being drained by the firms it named—Texoma Natural Gas Co., Cities Service Gas Pipe Line Co., Panhandle Eastern Pipe Line Co., North American Development Co. and Southwest Development Co. These five own 80 per cent of the gas reserves, the petition said.

R. D. Parker, chief oil and gas supervisor of the Railroad Commission, said the commission has a gas conservation program already started and plans at once to tighten up on it to prevent gas waste and protect Panhandle gas reserves.

"There would be more enthusiasm for protecting gas reserves in the Panhandle," he said, "if landowners and others whose properties are being drained are given a market for their gas ratably with others."

The Railroad Commission recently has been enjoined in separate federal court proceedings from interfering with major Panhandle gas operators, pending a court hearing testing the common purchaser law as it relates to natural gas. Officials believed if the law is upheld the gas conservation program will be solved.

CALIFORNIA SYSTEM BEING REORGANIZED

LOS ANGELES, Calif., Jan. 4.—Under the reorganization of the entire pipe line division of the Standard Oil Co., the general headquarters, San Joaquin Valley division, of which J. J. Wilt is general superintendent, are being moved from the company office building in Bakersfield to the Kern River headquarters camp.

Superintendent Wilt will have charge of the Kettleman-Estero Bay pipe line department that carries the light oil of the Kettleman Hills to the ocean shipping terminal.

Harry R. Warren, chief clerk, will move to the Kern River headquarters, in charge of the offices. Clyde Swigart, superintendent of the Kern River pipe line department for 10 years, is to be transferred to the Kettleman-Coalinga district and Max Shaffrath, for 25 years superintendent at Coalinga, is to be transferred to the Kern River headquarters.

Edward T. McMahon is to remain as superintendent of the Midway-Sunset McKittrick district pipe lines, but his assistant, C. D. Ball, will go to the Kern River headquarters as maintenance engineer of the pipe line activities. L. S. Weber of the Bakersfield office transfers to Kern River as assistant to Mr. Ball.

Warren Wass of Midway goes to the Kettleman Hills as engineer and S. D. Davis and Frank Byrns of Bakersfield go to the Kettleman Hills.

Centralization of the San Joaquin Valley pipe line division at the Kern River headquarters, already extensively equipped with buildings, warehouses and yards, is regarded as an economy move.

PIPE LINE CONSTRUCTION INDICATIONS FOR 1932

Looping of oil trunk pipe line systems to enable different companies to obtain the type of crude oil desired for certain refineries is a recent development in the pipe line business which presents many interesting angles to the general situation in considering the outlook for 1932. At the same time proposed extensions of existing natural gas trunk pipe lines to supply large cities and centers of population not now enjoying this fuel will probably result in much pipe line activity during this year. Consideration being given by a number of concerns to the matter of transporting gasoline by pipe line indicates a number of new lines for this method of transportation will be constructed this year.

In studying these developments and possibilities, maps showing existing oil, natural gas and gasoline trunk pipe lines are essential. The only maps giving all this information are those compiled and published by The Oil and Gas Journal. These maps are copyrighted and can be obtained only from this publication. They measure 36 by 48 inches and are printed on especially heavy bond paper, the pipe lines being shown in red.

Oil trunk and gasoline pipe lines are shown on one side of the sheet and natural gas trunk pipe lines on the reverse side. The cost of all three maps is $1 postpaid.

PIPE LINE EXPANSION

More natural gas pipe lines were built in 1931 than ever before, and now, says the New York Times, there is serious talk of a 1,500-mile project from Texas to Buffalo which promises to surpass in size any ever constructed. Cities Service, the Insull interests, the Standard Oil Co. of New Jersey and The Texas Corporation are reported to be sponsoring the plan, this group having apparently determined to beat its huge pipe line record. The steel industry is looking forward to an order for 200,000 tons of steel pipe.

EAST TEXAS WELLS ARE NOW CONNECTED

DALLAS, Tex., Jan. 5.—The 19 wells formerly without connections in East Texas are now all producing and have been connected by different purchasing companies operating in the district. Last week a committee was appointed from among the purchasers to study the situation and find connections for all unconnected wells and through the efforts of this committee the above mentioned connections were made.

HOUSTON CHANNEL LINE

HOUSTON, Tex., Jan. 4.—Construction of the 770-foot tunnel under the ship channel that connects Houston with the deep water of the Gulf of Mexico will be completed soon by Sinclair Texas Pipe Line Co. The tunnel will be used by the company for the trunk pipe line from East Texas oil field to its refinery and deep water terminal. It is of sufficient size to accommodate a number of additional pipe lines and space will be leased for this purpose.

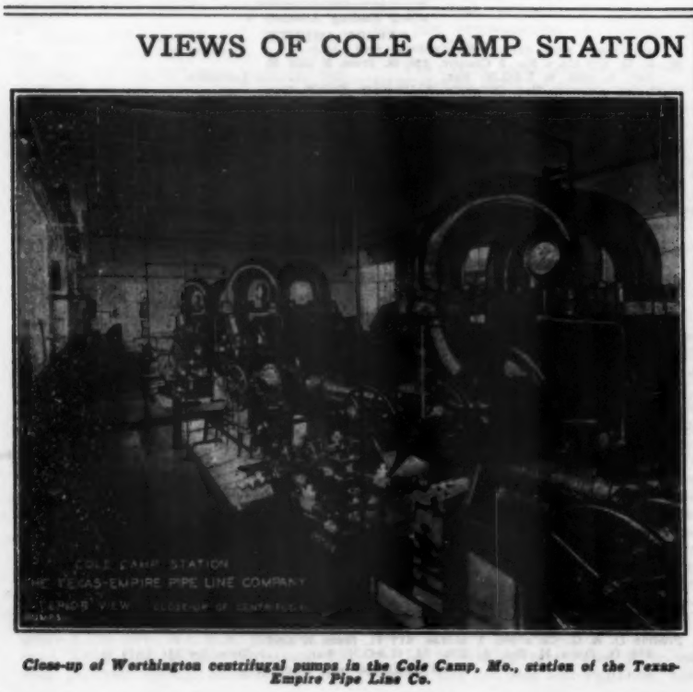
MT. PLEASANT LINE COMPLETED

MOUNT PLEASANT, Mich., Jan. 4.—The pipe line of the Peerless Oil Co. from the Midland Field to the town of St. Louis, about 14 miles in length is reported completed. The crude will then be loaded on tank cars for shipment to various points. The Talbot Oil Co. reports an 85,000-bbl. storage tank has been completed, the largest storage tank in the Michigan fields.

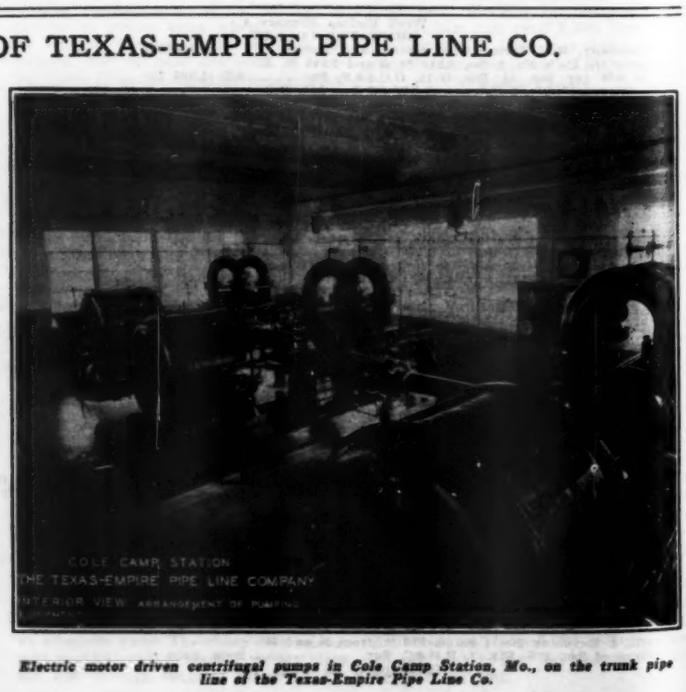
IRAQ LINE SURVEY

Survey parties of the Iraq Petroleum Co. have been busy marking the course of the pipe line between Kirkuk and Baiji. Upon its completion the same work is to be done between Baiji and Haditha and then extended west. Completion of the survey of the entire line is not expected inside of some months.

VIEWS OF COLE CAMP STATION OF TEXAS-EMPIRE PIPE LINE CO.



Close-up of Worthington centrifugal pumps in the Cole Camp, Mo., station of the Texas-Empire Pipe Line Co.



Electric motor driven centrifugal pumps in Cole Camp Station, Mo., on the trunk pipe line of the Texas-Empire Pipe Line Co.

Oklahoma Production Takes Big Drop

Decline Takes Place Before New Allowable Becomes Effective. Western Side of Oklahoma City Field Is Interesting

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oklahoma's production of crude shows a substantial decline for the week ending January 2, when the daily average was approximately 492,780 bbls., which amounts to a decline of 41,600 bbls. from the previous week. A large part of the decline in the State's daily average production is from the Oklahoma City Pool, which averaged 137,100 bbls. a day and is the lowest daily average for any week since the military shutdown was lifted October 10.

During the month of December the daily average production of the Oklahoma City Field was 182,456 bbls., or a total of 5,656,163 bbls. The Corporation Commission's daily allowable for that month was 180,000 bbls. The new commission's order fixing the daily allowable of the field at 160,000 bbls. was effective Friday, January 1.

During the week Governor Murray issued an executive order prohibiting the drilling of wells within 1 mile of the state capitol. The order is to be enforced by national guardsmen if necessary. The order filed with the secretary of state said that "any effort to drill a well within 1 mile of the capitol is prohibited in the interest of the sovereign State of Oklahoma and the lives and property of citizens surrounding the capitol, and that any effort to violate this order shall be restrained by the military power of the State, if need be."

The governor issued his order immediately after attempts were made by several independent oil operators to force the city planning commission to permit the drilling of three wells within five blocks of the capitol.

Western Side of Field

During the next 12 months, many geologists believe, the western limits of the Oklahoma City Field will be defined. The southwest edge of the field is puzzling. A recently completed well in that part of the field flowed 560 bbls. of oil in three hours, with an estimated 30,000,000 feet of gas a day. The well, Phillips Petroleum Co. and Shell Petroleum Corp.'s No. 2 Egermier, NW cor. SW SW Section 23-11-3w, was tested the second time during the week and made 560 bbs. of oil in three hours. The well is only one location north of a well that has a rated potential of 29,000 bbls. a day. Another completed well in the area is the Continental Oil Co. and Kessler Oil Co.'s No. 1 Canning, SE cor. Section 22-11-3w, which flowed 3,992 bbls. of oil in three hours when opened the second time during the week. It was completing its initial production test. What is puzzling the geologists is why a well one location north of a 29,000-bbl. well should only make 4,500 bbls. potential. Whether the sand is pinching out or dipping in that direction is not known at the present time.

Another well was completed on the southwest edge of the field during the week. The Skelly Oil Co.'s No. 1 Ledbetter, NE cor. NW NE Section 22-11-3w, flowed 714 bbls. of oil in three hours. The gas was estimated at 20,000,000 feet a day. The Wilcox sand was found at 6,500-33 feet.

Government Petroleum Co.'s No. 1 White, SW cor. SE Section 3-11-3w, was completed making 1,080 bbls. of oil the first hour and was shut in. The gas was estimated at 40,000,000 feet a day. The Wilcox sand was found at 6,281-6,409 feet.

Siliceous Lime Production

The Siliceous lime production in the Oklahoma City Field has been allocated by companies. The production of the 47 lime wells was allocated by the owners. Under the last order a total of 7,000 bbls. a day was allowed the area. The division made was as follows: Indian Territory Illuminating Oil Co. with 30 lime wells was given a total of 4,300 bbls. a day; Coline Oil Co. with 4 wells, 450 bbls.; Shell Petroleum Corp. with 4 wells, 750 bbls.; Prairie Oil & Gas Co. with 6 wells, 1,400 bbls; Mid-Kansas O'l & Gas Co. with 3 wells, 100 bbls. These allocations are for the first 15 days of January after which they may be changed. The oil may be produced from all the wells or any single one, but at no time can the companies overproduce their quota. During the first 17 days in December these same wells made a daily average production of 8,871 bbls.

Tremendous Producer

One of the largest wells ever completed in the State was given another production test during the week making 8,277 bbls. of oil in two hours and seven minutes. The well is Marshall Oil Co., Wilcox Oil & Gas Co. and others' No. 1 Buxton, SW cor. NE NW, Section 3-11-3w. It has flowed a total of 16,617 bbls. of oil in 4 hours and 22 minutes. This huge producer is estimated to be a 100,000-bbl. well. It has been given three production tests and cut the connections each time. It is producing through 9-inch casing landed at 6,331 feet with the total depth 6,482 feet.

An experiment is to be tried on Oklahoma City producing wells in which Oklahoma City is interested by equipping some of them with oil meters. It is estimated it would cost approximately $335 a well to equip 40 oil wells with oil meters, to keep a check on the oil shipments. The Oklahoma City share of the oil revenues from its wells now averages approximately $15,000 a month. A year ago the sum was approximately twice that amount. Meters will probably be installed on one or more wells for a month's tryout before any definite plan is made.

Another Company Cited

Marshall Oil Co. was cited before the Oklahoma Corporation Commission for alleged overproduction in the Oklahoma City Field in November. The petition stated that the company's well in Section 1-11-3w had a net allowable production of 9,581 bbls. in November, but it is said to have exceeded this amount by producing 22,789 bbls. of oil during the month. Hearing has been set for January 22.

During the week several independent operators in the Oklahoma City Field filed a petition with the Oklahoma Corporation Commission opposing some of the recent rules and regulations that are now in force in the Oklahoma City Field. They are opposed to the 50-bbl. special allowable granted all wells in the field, which was incorporated in the new proration order. They recommend a 100-bbl. allowable for wells in the lower Simpson area showing 3 per cent or more water, and they are against a gas-oil ratio with a maximum as high as 1 bbl. to 10,000 feet of gas.

The new Corporation Commission order allows 100 bbls. exemption to the "water" wells, except those in the lime area, which zone was granted a total of 7,000 bbls. exemption. No ruling has yet been made on the gas-oil ratio.

Under the new Corporation Commission orders the underproduction of November and December was added to the underage as of October 1, to be run ratably at the rate of one-half of 1 per cent. The oil in lease storage on the first of January will be classed as underproduction and will be subjected as such.

Magnolia Makes Oil Contract

Magnolia Pipe Line Co. has made connections to the Wilcox Oil & Gas Co. leases to purchase approximately 3,000,000 bbls. of oil to be handled as produced from the company's properties in the Oklahoma City Field during 1932, the first shipment to start January 1, 1932, and the amount will depend upon the Wilcox Oil & Gas Co.'s allowed production as to the daily shipments.

It is believed the Wilcox Oil & Gas Co. will continue to operate its refinery at Bristow with crude oil from its present connections in the Bristow and Cushing districts.

The Wilcox Oil & Gas Co. owns and operates 10 producing wells in the Oklahoma City Field, and has an interest in several others. Nine of the 10 wells have a total rated potential of 70,340 bbls. a day, while the tenth well is serving its proration shutdown time. The nine wells produced 109,243 bbls. of oil during November.

The Magnolia Petroleum Co. also has a working agreement with the Tidal Oil Co. to handle its crude oil from the Oklahoma City Field. During the week ending December 26 only 4,293 bbls. of oil were handled and the Tidal Oil Co. has not made any nominations for the next three months.

The Stanolind Crude Oil Purchasing Co. continues to take Tom Slick Oil Co.'s daily production. About six months ago the Oklahoma County court approved the contract with no certain amount of crude specified.

Shell Pipe Line Co. expects to increase its activities by making contracts for crude oil in the capitol city field. Effective January 1, it completed an 8,000-bbl. daily contract with the Phillips Petroleum Co. but it is reported that the Shell Petroleum Corp. is taking over the Operators Oil Co.'s gathering system and connections and there is a possibility of it extending these gathering lines.

Sinclair Pipe Line Co. is preparing to change a number of connections, extending greater service and assistance to owners of small properties with one or two producing wells. These operations are in the north and west sides of the field where the large wells have been recently found.

At one of the recent meetings one of the members of the umpire's committee of the Oklahoma City Field offered to turn the proration job over to the purchasers, but those representatives refused to have anything to do with the prorating of that production. Some of the purchasers have expressed opinion that the proration of

(Continued on Page 68)

WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location— Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW, Sec. 12-27-11w ..... S.D. 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w.. S.D. 5,502 ft.

ATOKA COUNTY

Campbell's No. 1 Baird, NW NE SW, Sec. 31-1-13..... Rig.
Edgerton Edwards' No. 2 Rowland, SE NE NW Sec. 6-1-15 ..... Rig.

BECKHAM COUNTY

Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w.. T.D. 2,344 ft.; plugged back to 1,890-1,900 ft.; 1,500,000 ft. gas.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w.. Waiting on cmt. to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-2-22w ..... S.D. 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w..... S.D. 3,575 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w ..... S.D. 5,115 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w ..... S.D. 1,115 ft.

CHEROKEE COUNTY

La Piere et al's No. 1 Woods, C SE SE Sec. 27-17-21.... S.D. 1,504 ft.

COAL COUNTY

Radial Oil Co.'s No. 1 McGraw, NE NW Sec. 2-1s-8 .... Drlg. 1,450 ft.
McCraw Oil Co.'s No. 1 Ward, NE SE, Sec. 35-1-8..... Drlg. plug; showing 2,000,000 ft. gas 1,765-1,846 ft.; mudded off gas; S.D.; rig moved.
Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8 ..... S.D. 760 ft.

COMANCHE COUNTY

G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w.... S.D. 1,450 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w.. S.D. 5,850 ft.

GARVIN COUNTY

Malarnee et al's No. 1 Phillips, NE SW SE Sec. 24-2-2w.. S.D. 4,830 ft.

GREER COUNTY

Dovell et al's No. 1 Capell, NW cor. Sec. 1-7-22w..... 5,000,000 ft. gas 1,455-65 ft. T.D. 1,760 ft.
French's No. 1 Murphy, SW NW Sec. 23-7-21w..... S.D. 1,645 ft.

HARPER COUNTY

Sinclair O. & G. Co.'s No. 1 Howell, C SW SW, Sec. 14-26-24w ..... 20,000,000 ft. gas 5,350-5,400 ft.; T.D. 5,539 ft.; S.D.; sprayed 50 bbls. gasoline.

HASKELL COUNTY

Ault et al's No. 1 Harrison, CWL SE NE Sec. 14-9-19.. S.D. 650 ft.
Ault et al's No. 1 Hall, NW SW SW, Sec. 14-9-19 ..... S.D. 2,000 ft.
Ault et al's No. 1 Hall, SE NW, Sec. 25-19-9 ..... S.D. 200 ft.
Holden's No. 1 Phillips, SE cor. Sec. 3-9-18e ..... S.D. 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW, Sec. 10-9-18e... S.D. 2,387 ft.

KAY COUNTY

W. H. Atkinson et al's No. 1 Hayes, SE NE Sec. 24-28-3.. Drlg. 1,460 ft.
Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1..... Location.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2 ..... S.D. 3,693 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w..... Rig on ground.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-18w ..... S.D. 820 ft.

LATIMER COUNTY

P. English's No. 1 Unknown, NW SE. Sec. 16-6-19 ... S.D. 1,542 ft.

LE FLORE COUNTY

Dowd et al's No. 2 Thomas, SE NE. Sec. 16-3-22 ..... Drlg. 1,100 ft.

LINCOLN COUNTY

Hilton Phillip's No. 1 Phillips, SW NW, Sec. 2-14-3. .... Fishing 4,840 ft.
Moto et al's No. 1 School Land, NW cor. Sec. 36-17-5... S.D. 1,160 ft.

(Continued on Page 58)

A New Year—
Another Chance

Too much crude oil, too much straight run gasoline, too much fuel oil—that's what made the trouble in 1931

But 1931 is behind us

This is 1932—a new year and a new opportunity

Let's produce less crude and make better use of it

Let's Dubbs crack more

Dubbs cracking is the way to better gasoline, better fuel oil and better prices for them

Better crude prices, too

That's the way back to profits for the whole industry

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

Second New Pool in Victoria County

Two Other Rank Wildcats in That County Are Testing Showings. Deep Test Northeast of Refugio Pool in Good Looking Sand

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Jan. 4.—Interest in the Victoria and Refugio County district of the lower coastal country as an important petroleum reserve was given renewed impetus the past week with the opening of the second new oil field there within a month. Coincident with this two other rank wildcats in Victoria County were preparing to make tests of oil and gas showings encountered by them, while northeast of the Refugio Field a deep test is in a good looking sand giving promise of proving an important extension of that area.

The new field was opened by The Texas Company's No. 3 McFaddin, in the John M. Rine Survey, extreme southwestern part of Victoria County. The well, in a sand at 5,827-35 feet, came in under its own pressure after washing and in the first nine hours flowed 270 bbls. of pipe line oil through a five-eighths inch choke with a pressure of 1,250 pounds on the tubing and 1,075 pounds on the casing. Eighteen feet of 4¾-inch screen was set. Later it was pinched to a quarter inch choke and flowed at the rate of between 600 and 700 bbls. daily. As this is written no accurate test of the gravity has been made but the oil is approximately 40°. The well was a New Year Day's present, being completed on the evening of January 1.

Location of this producer is some 3½ miles northeast of Humble Oil & Refining Co.'s No. 1 O'Connor, a wildcat well in northern Refugio County completed early in December. Although in the same general area and in a territory which is expected to be proved up eventually as one large field, these wells are in different sands, with the former in a horizon at a total depth of 4,155 feet. The sand from which the Humble well is producing was encountered by the new well but tested salt water. The oil in these wells also is entirely different with the O'Connor oil being heavy coastal crude while the other is of light gravity.

Area Well Controlled

This territory has been looked upon generally as one of considerable potentialities for oil. It already has been proved as a gas field of large extent with numerous sands. The new producer is only a half mile to the north and west of a gas well, No. 2 McFaddin, completed by the same company early in 1930 with bottom of hole at 2,025 feet, and in it a number of sands were passed up in any one of which a good gas well could have been completed, it is believed. These two wells are some 4 miles west of what is known as the McFaddin gas field, where United Gas Co. has four wells in a 3,700-8,800-foot horizon. Two miles northwest of that field is Slick estate's No. 1 McFaddin, a lone gas well completed early in 1930 in a 3,500-foot sand. Large controlled blocks are forestalling any boom development of the district.

A late development in this district is the taking of a 3,000-acre block by Magnolia Petroleum Co. This block adjoins that of the Slick estate and also one recently taken over by Humble Oil & Refining Co. from the Petty interests. The principal block owners in the district in addition to the above are The Texas Company, Shell Petroleum Corp., Houston Oil Co., United Gas Co. and Lion Oil & Refining Co., the latter two jointly owning one block of more than 5,000 acres. In this block United Gas holds only the gas rights while the Lion Oil & Refining Co. owns the oil rights, although so far there has been no oil on the block.

The new well of The Texas Company is just a mile from a railroad at the town of McFaddin (Marianna) and work already has been started on laying a line to that point and building a loading rack. Limited storage facilities have been provided at the well to handle the oil until completion of the line.

New Showing

Some 15 miles to the northeast in an entirely separate district of Victoria County another wildcat was dividing interest with the new well completed by The Texas Company in that it had drilled into a sand showing oil and gas. The sand was topped at 5,182 feet and was drilled into to 5,189 feet. This wildcat is Bunte and associates' No. 1 Keeran, Martin DeLeon Survey, and is on a 2,500-acre tract "farmed" out to these operators by the Gulf Production Co. as a part of the latter's original 5,000-acre block. Before encountering the sand the drillers had about decided to abandon the hole. The showings are looked upon favorably and at present the hole is being reamed down for a test. The Keeran Ranch is one of the large holdings in the county.

Houston Oil Co.'s No. 1 Conrad, T.& N.O. Survey No. 1, on what is known as the Beck prospect in northern Victoria County, also is preparing to test gas showings in a horizon just above 4,700 feet. At that level the well had a blowout last August but the hole was deepened in search for oil and has had considerable difficulty with heavy shale. A total depth of 5,290 feet was reached but much of that hole has been lost and has been plugged back to 4,656 feet, where the test will be made.

Except for that mentioned there has been no other production in Victoria County. Two years ago Humble Oil & Refining Co. in a deep test drilled on its Nursery block in the northern part of the county encountered a number of showings and got some oil and gas but not in commercial volume and the hole was abandoned.

Refugio County

Northeast of the Refugio Field, in Refugio County, United Production Corp.'s No. 2-A Fox is in a sand at 6,464-74 feet and has cemented 5½-inch casing at 6,464 feet. In a drill stem test this sand made two joints of 47 gravity oil in five minutes and showed a pressure of 600 pounds. If a well is made it will mark a 3½-mile extension of the 6,400-6,500-foot sand production at Refugio. The well is only 1,600 feet north of No. 1-A Fox, the northernmost of three producing wells which constitute what is known as the Fox extension district of Refugio, but those three wells are in an entirely different sand at 5,900 feet. No. 2-A encountered that sand, as well as several others since then, but went down for the deeper Refugio production.

Salt Dome District

In the salt dome district of the Gulf Coast there was very little of importance during the week, with few completions reported. At Lockport, Calcasieu Parish, Louisiana, Vacuum Oil Co. completed its No. 32 Miller flowing an estimated 1,000 bbls. of pipe line oil daily from sand at 4,373 feet. Daisetta and Liberty Oil Co. got a small well in its No. 1 Bashara at Hull, making 50 bbls. daily at a total depth of 4,408 feet. At Lost Lake, Pure Oil Co. abandoned its No. 6 Lost Lake, a deep wildcat on the west flank of the dome. This test went into anhydrite from 6,169 to 6,205 feet and was to have been drilled deeper in an attempt to go through the cap and salt but quit when drill stem hung up.

At Barbers Hill, Mills Bennett Production Co.'s No. 6 Wilburn apparently has defined the inner limit of the recently opened 4,400-4,500-foot Miocene sand play on the east side of the dome by missing the sand and going into the "Big" lime, topped at 4,533 feet. Being close up on the dome, this test probably will be watched closely by operators in view of the possibility of it finding Oligocene sands high up on the dome. Previous Oligocene production on that side of the dome has been around 5,200 feet in deep tests drilled out from the dome. The latest play has been in the sands underlying the salt overhang where shallow Miocene production recently was developed.

Montgomery County

Possibility that some activity is to be started soon in the Conroe district of Montgomery County has been indicated with reports that a number of locations are due to be made. Expected new drilling in this district, following the bringing in several weeks ago of a wildcat wet gas well by Strake Oil Corp. on property of the South Texas Development Co. in the Theodore Slade Survey, so far has not materialized. The well, however, was opened again the past week after installation of additional separator capacity, and has been blowing steadily without the slightest decline from its original pressure and has been making an estimated 100 bbls. daily of high gravity oil, which is being run to storage provided at the lease. The well has been showing a pressure above 1,500 pounds and has proved that it is a real well and not a pocket freak, and it is looked upon by many as the forerunner of a possible major play. Due to the newness of the territory and uncertainty of the trend and nature of the structure it still is not likely that any development on a large scale will be undertaken until after the drilling of another test. The Strake interests are reported to have a tentative location and a few leases have been taken with drilling provisions. However, very little actual lease trading has been done yet. The Strake Oil Corp. has more than 8,000 acres in its block, which will prevent any breaking in very close to the well.

GULF COAST FIELDS AND WILDCATS

Week Ending January 2
All Rotary

BARBERS HILL—CHAMBERS COUNTY

Company, farm and location—	Remarks—
Mills Bennett Prod. Co.'s No. 6 Wilburn, Henry Griffith League, 125 ft. W of No. 5 in center of tract	Drlg. hard lime 4,571 ft.
Mills Bennett Prod. Co.'s No. 5 Gulf-Fisher, Wm. Hodges Sur., 75 ft. from N line, 191 ft. W of No. 4	Drlg. shale 3,589 ft.
R. E. Ferrell's No. 2 Wilburn, Henry Griffith League, 215 ft. W of No. 1 in center of 45-acre tract	Hard sandy lime 1,832 ft.; trying to set 10-in. csg.
Nat Hunter Prod. Co.'s No. 1 S. E. Morgan, 225 ft. N of S line in center of Strip 2 (4.4 acres), Henry Griffith League	Oil sand 5,109-23 ft; cmtd. 7-in. csg. 5,096 ft.
Nat Hunter Prod. Co.'s No. 1 J. M. Fitzgerald, Henry Griffith League, 75 ft. from W line and 125 ft. from S line of tract	Drlg. sandy shale and streaks of lime 3,730 ft.
Nat Hunter Prod. Co.'s No. 2 Ilfrey (W.O.), Henry Griffith League, 250 ft. from E line and 30 ft. from N line	Swbd. S.W. and oil 5,110 ft; to pump.
Sinclair Oil & Gas Co.'s No. 9 Wilburn, Wm. Hodges Sur., 50 ft. N of S line and 550 ft. W of No. 6	Sand showing oil 4,407-28 ft; cmtd. 9-in. csg. 4,393 ft.
Sinclair Oil & Gas Co.'s No. 10 Wilburn, Wm. Hodges Sur., 50 ft. S line, 100 ft. W of No. 9	Drlg. shale and lime 4,154 ft.
Sinclair Oil & Gas Co.'s No. 11 Wilburn, Wm. Hodges Sur., 125 ft. W of No. 8 and 45 ft. S of N line	Drlg. hard sandy shale 3,359 ft.
Sun Oil Co.'s No. 2 Higgins, Wm. Bloodgood Sur., 1,095 ft. W of No. 1 and 50 ft. N of S line	Drlg. salt 3,496 ft.; top of salt 1,424 ft.
Sun Oil Co.'s No. 12 Wilburn, Wm. Hodges Sur., 50 ft. from N line and 75 ft. W of No. 11	Sandy shale showing oil 4,421-37 ft; cmtd. 7-in. csg.
Sun Oil Co.'s No. 2 Winfree (W.O.), W. D. Smith Sur., 50 ft. from SW line and 150 ft. of S line	Oil sand 5,593-5,605 ft; cmtd. csg.
The Texas Company's No. 2 Lawrence, Henry Griffith League, 240 ft. from E line and 412 ft. from N and S lines of strip	Drlg. hard sandy shale 5,145 ft.
The Texas Company's No. 3 Wilburn, Henry Griffith League, 25 ft. W of No. 5 and 50 ft. N of S line of tract	Drlg. sand and boulders 496 ft.

HUMBLE—HARRIS COUNTY

J. E. Burt et al's No. 1 C.O.&G.-Texas Co. fee, J. B. Stevenson Sur.	Set 27 ft. of 4½-in. screen 1,973 ft; blew in but sanded up; now swabbing.
J. E. Burt et al's No. 2 C. O. &G.-The Texas Co. fee, J. B. Stevenson Sur., 450 ft. N of No. 1	Derrick.
Sun Oil Co.'s No. 27 Bender, W. B. Adams Sur., 250 ft. W of No. 26 in line with No. 25	Rig.
The Texas Company's No. 37 Koehler, J. B. Stevenson Sur., 717 ft. E and 603 ft. S of NW cor. of S'V fee tract	Sticky shale 4,029-31 ft; cmtd. 7-in. csg.
The Texas Company's No. 46 Stevenson fee, 1,630 ft. N and 1,690 ft. W of SE cor. of J. B. Stevenson Sur.	Drlg. sticky shale 5,083 ft.
E. M. Wilson's No. 7 W. & P. Gulf fee	Drlg. sand rock 702 ft.

PORT NECHES—ORANGE COUNTY

The Texas Company's No. 1 Polk-Kuhn-Glass, 260 ft. E and 1,545 ft. S of SW cor. Marshall Beaucham Sur., in the T. J. Notgrass Sur.	Wtr. sand and shale 4,510 ft; reaming.
The Texas Company's No. 2 Kuhn, 587 ft. S and 150 ft. W of NE cor. of the Mary E. Hall Sur. No. 2	Location.

BIG CREEK—FORT BEND COUNTY

Gulf Prod. Co.'s No. 62 Davis, M. Young Sur., 460 ft. NE of No. 19 and 600 ft. SE of No. 57	Drlg. shale 4,223 ft.

HULL—LIBERTY COUNTY

Daisetta and Liberty Oil Co.'s No. 1 Bashara (W.O.)	T.D. 4,408 ft; completed flowing 50 bbls. P.L. oil, ¾-in. choke, 250 lbs. pressure; gravity 42°.

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Zwolle Field Is Extended Two Miles

One Completion Flowing 1,000 Bbls. Pipe Line Oil. Increase in Drilling Operations in This Area Expected

By J. R. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Jan. 4.—The Zwolle Field of Sabine Parish, North Louisiana, started the new year with two important completions which extended producing territory of the southeastern flank of the field about 2 miles. Smitherman & Grigsby's No. 1 Gardner, Section 12-7-11, hit a good crevice in the chalk rock and resulted in one of the best wells to be brought in in this area in some time. After setting 6-inch casing at 2,426 feet, the plug was drilled and the hole was being deepened when the well blew out from 2,465 feet with the drill stem in the hole. Since pulling the drill stem, the well is flowing at the rate of 1,000 bbls. daily of pipe line oil. The test is 1 mile southeast of Merritt and others' No. 1 Byrd, near the center of Section 1-7-11, which opened up this far eastern extension about eight months ago.

The new test extends production eastward about three-fourths of a mile, the only other successful completion in Section 12 being in the opposite northwest corner. The results of the new producer only substantiates the odds against operators in this chalk rock area, as there are several dry holes between it and the discovery well.

The greatest extension of production for the southeastern flank developed from results of Lyons & Neely's No. 1 Clanan in Section 14-7-11. This well, which is practically 2 miles south of the nearest production, made several good heads of oil from a total depth of 2,524 feet and is now standing with 1,800 feet of fluid in the hole. The well will probably be swabbed and tubing set in an effort to make it flow.

May Stimulate Drilling

The result of these wildcat extensions are expected to add new impetus to drilling in this already active area. Despite the odds against the operators of this chalk rock production, an average of one producer to two dry holes, the cost of drilling a test is low, and if a producer is obtained from a crevice in the rock, there is a ready market for the oil with no proration orders to worry over. With this situation prevailing, local operators are finding it much more profitable to operate in Zwolle than in the East Texas fields. Also, confidence in the Zwolle Field has been strengthened during the past few weeks from results of the Loring Oil Co.'s deep test, which indicates that a deeper producing horizon exists in that area.

Gas Wells in Mississippi

The Jackson Field of Mississippi furnished two gas wells to finish out the list of completions for the week and make a perfect score for this division. Both of the new gassers were in Section 12-5n-1e, the hot spot of the field on the east side of Pearl River in Rankin County. Anderson and others' No. 1 Brown, 166 feet east and 788 feet south from the center of the section, had an estimated initial flow of 25,000,000 feet of dry gas from 2,402 feet.

One-half mile southwest of the Anderson well, the Pioneer Oil & Gas Co.'s No. 1 C. M. Motor, was estimated to have an initial flow of 35,000,000 feet from a total depth of 2,422 feet. The rock pressure on both wells registered around 900 pounds. The Jackson Field has not missed a week in several months of reporting from one to three good gassers, either from the Hinds or Rankin County areas, and has been the most consistent producing proven field of any in the division.

Expect More Wildcatting

Indications are that this division will experience more wildcatting during this year than in the year previous, especially in North Louisiana and Mississippi. The Gulf Refining Co. has completed assembling a block of wildcat acreage in northwest Bossier Parish consisting of 14,000 acres. The block centers around Section 31-23-3w, and is about 3 miles northeast of the Plain Dealing Oil Co.'s No. 1 Nation in Section 15-22-14, which first came into the spotlight about six months ago after flowing by heads from 5 to 10 bbls. of oil daily from a depth of 2,888 feet. The latter wildcat has recently been shot and swabbed and is reported to be good for 15 bbls. daily of 28 gravity oil. The Gulf block is between this test and the Cartersville Field, about 10 miles northeast. The small Bradly Field, just across the line in Arkansas, is about 15 miles north. The block was taken over on a straight commercial lease of five years with $1 yearly rentals per acre.

The Louana Oil & Gas Co. is rigging up to drill a test on a large block assembled in the Greenwood gas area, western Caddo Parish, and east of the Waskom Field of Harrison County, East Texas. This acreage adjoins the block of Belchic & Laskey, who brought in the discovery well in this vicinity more than a year ago. These operators have since completed several good gas wells from different pay horizons, operating as the Pyramid Oil & Gas Co. The Louana Oil & Gas Co. is headed by W. E. Hall, local independent operator, who has recently been successful with several leases in the proven areas of Gregg County, East Texas. Mr. Hall is also the pioneer operator of the Cartesville Field of Bossier Parish, having brought in the first oil well in that area.

Watching Deep Tests

The several deep tests in widely scattered parts of the division have not made much progress during the week, although they are being closely watched. The most interesting of these several tests at the present time is the Loring Oil Co.'s No. 18 Bowman-Hicks, Section 15-7-12, in the Zwolle Field of Sabine Parish. This is the deepest hole yet to be drilled under the chalk rock production of that section. The test encountered a strong gas pressure after drilling through 4 feet of hard cap rock from 4,371-75 feet. It was necessary to pump baroids and heavy mud into the hole to stop the flow of gas, after which a drill stem test failed to develop any results because of a bad seat. Four feet of broken lime was then cored from 4,375-79 feet and this is the total depth of the hole at present.

Prior to encountering the cap rock where the gas showed up, the drill bit had penetrated 33 feet of salt water sand, an unusual circumstance in this section, and the crew has pumped 175 sacks of cement into the hole in an effort to cut off the salt water above the cap rock.

Arkansas' deepest test, the Lion Oil Refining Co.'s No. 9-A G. P. Hayes, Section 4-16-15, in the Smackover Field of Union County, still has drill stem stuck at a total depth of 7,255 feet, in rock salt. The crew is circulating oil to lubricate the stuck drill stem which has been moved about 2 feet off of bottom during the last two days. Operations in this test have been handicapped by high water during the last two weeks.

Mississippi Test Drilling Ahead

In Clarke County, Mississippi, the Gulf Refining Co.'s No. 1-A Long Bell Lumber Co., Section 10-2n-16w, after sidetracking 3-inch drill stem at 4,651 feet, is drilling at 4,715 feet.

Another Trinity gas well for the Sugar Creek Field of Claiborne Parish in North Louisiana, is expected within a few days with the completion of the United Gas Public Service Co.'s No. 1 Dobbins in Section 12-19-6. Nine-inch casing was set in the test at 4,215 feet and the core is picking up anhydrites at 4,270 feet. The same company's No. 11 Werner, D. B. Lewis Survey, a deep test 2 miles east of Trinity gas production in the Bethany Field of East Texas, is temporarily shut down for equipment at 5,582 feet.

Practically all of the wildcats in the border counties of East Texas, an area that has experienced much activity since the discovery of the East Texas Field, are shut down for various reasons. Some of them have ceased operations for the holidays, but many have reached the contract depth with barren results.

Daily Average Runs

The fields of North Louisiana and Arkansas showed a net increase of 935 bbls. daily in the average runs during

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYLLES PARISH

Company, farm and location— Remarks:
Stauffer & Eshleman's No. 1 Caruth, Sec. 40-1n-7e..... Derrick.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C. Sec. 16-22-14..... Swbng. 2,890 ft.
Dr. W. N. Hankin's No. 1 Newell, 300 ft. S and W, NE cor., Sec. 13-19-11..... Drlg. 1,730 ft.
H. I. Morgan's No. 1 Smith, Sec. 22-19-11, 1,520 ft. N, 400 ft. W, SE cor. ..... Rigging up.
D. L. Perkins' No. 1 Ardis & Co., 1,127 ft. N, 198 ft. E, SW cor., Sec. 13-15-11..... S.D. 1,004 ft.

CADDO PARISH

Louana O. & G. Co.'s No. 1 Hammock, Sec. 32-19-6, 660 ft. N and W, SE cor. ..... Rigging up.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4..... S.D. 110 ft.
Hudson et al's No. 1 Burton, Sec. 35-12-2e..... S.D. 2,950 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6..... T.A. 3,097 ft.

DE SOTO PARISH

E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 30-13-15..... S.D. 3,038 ft.
Rellitt Oil Co.'s No. 1 Ganno hrs., 300 ft. S and E, NW cor. NW NE, Sec. 12-11-16..... S.D. 1,965 ft.
A. R. Smith's No. 1 Horn, Sec. 16-12-16, NE cor. Sec. .. Rigging up.
Walters-Nicholson, tr.'s No. 1 Jim Guy, Sec. 3-11-13.... S.D. 1,266 ft.

MOREHOUSE PARISH

United Gas Public Service Co.'s No. 2 Sandidge, Sec. 11-20n-4e, 656 ft. S, 1,332 ft. W, NE cor. NW ... S.D; high wtr. 2,132 ft.

NATCHITOCHES PARISH

Dr. H. S. Gerson's No. 1 Smith, Sec. 11-10-8, 2,000 ft. N, NE cor. of irregular Sec. 10 in Sec. 11..... Blowing wild; 3,000,000 ft. gas, 7,000 bbls. S.W. 585 ft.
Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10.. S.D. 1,518 ft.
R. A. Keaton's No. 1 Stephens, Sec. 25-10-6, 320 ft. N and W, SE cor. NW NW..... S.D. 178 ft.
Mid-West Prod. Co., Inc.'s No. 1 H. Brown, Sec. 34-11-10, 200 ft. W, 230 ft. S, NE cor. SE..... S.D. 1,185 ft.

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LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

CADDO PARISH—PINE ISLAND

Company, farm and location— Remarks:
Shreveport Oil Corp.'s No. 2-B Muslow, 1,000 ft. S, 300 ft. E. NW cor., Sec. 32-21-15..... S.D. 2,135 ft.
Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15..... S.D. 2,275 ft.

CLAIBORNE—SUGAR CREEK AREA

United Gas Public Service Co.'s No. 1 Dobbins, Sec. 12-19-6e, 1,186 ft. W, 700 ft. S. NE cor. Sec..... Coring anhydrite 4,270 ft.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 300 ft. S, NE cor., Sec. 2-20-4..... Location.

OUACHITA PARISH

Carbon Consolidated's No. 7 Guthrie, Sec. 50-20n-4e, 5,263 ft. N and 7,475 ft. W of cors. of Secs. 25, 26 and 49, in Sec. 50..... Location.

RICHLAND PARISH

United Gas Public Service Co.'s No. 1-B Colvin, Sec. 34-17-6, 657 ft. S, 754 ft. E. NW cor..... Set 6-in. 2,300 ft.

SABINE PARISH—ZWOLLE

Crescent Drlg. Co.'s No. 2 McCormick, Sec. 2-7-11..... Drlg. 2,250 ft.
Lyons & Neely's No. 1 McClanahan, Sec. 14-7-11, SE cor. SE NW..... Drlg. plug 2,402 ft.
Ohio Oil Co.'s No. 13 Bowman-Hicks, Sec. 35-8-12, 2,310 ft. N. 525 ft. W. SE cor. Sec..... W.O.S.R. 2,514 ft.
Pelican Nat. Gas Co.'s No. 11 La. Long Leaf Lbr. Co., Sec. 10-7-11. 330 ft. N and W, SE cor. NE NW..... 1,000 ft. oil in hole 2,592 ft.
Smith et al's No. 1 Hale, Sec. 1-7-12, 330 ft. S and W, NE cor. NW SE..... W.O.S.R. 2,065 ft.
A. F. Tarver's No. 2 Cutrer, Sec. 12-7-11, 330 ft. S and W. NE cor. NW NW..... W.O.S.R. 2,550 ft.
O. J. Baird's No. 1 Duggan, Sec. 14-7-11, 328 ft. S, 648 ft. E. from C of Sec..... Testing 2,461 ft.
Roy Baker's No. 1 Sabine Lbr. Co., Sec. 1-7-12..... W.O.S.R. 2,548 ft.
W. M. Coates' No. 1 Bowman-Hicks, 330 ft. S and W, of C, Sec. 3-7-12..... W.O.S.R. 2,441 ft.
O. A. Gautier et al's No. 1 Mischell, 330 ft. E, 150 ft. N, SW cor. SE NW, Sec. 30-8-12..... S.D; W.O. 2,532 ft.
Hawkins & Antoon's No. 1 Newton, Sec. 1-7-11..... W.O.S.R. 2,609 ft.
Hudson & Bird's No. 1 Walden, 480 ft. N, 300 ft. E. SW cor. SW NE, Sec. 26-8-11..... Lost packer on D.S. test 2,454 ft.

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Studying Proration Plans in Kansas

State's Production Close to Public Service Commission's Allowable of 100,000 Bbls. Some Objections

By W. A. Spinney
Staff Correspondent, Kansas Fields

Kansas crude oil production for the week ending January 2 shows a decline of approximately 2,200 bbls. a day, bringing the State's daily average to 102,900 bbls. a day. The Public Service Commission has set an allowable of 100,000 bbls. a day after January 1. The Ritz-Canton Pool in McPherson County shows a decline of 3,000 bbls. a day for the same seven days.

The Kansas Public Service Commission announced that two of the State's flush areas would be further curtailed effective January 1. The commission announced orders reducing the production in the Ritz-Canton Pool in McPherson County to 10½ per cent of potential and reducing the Schurr Pool in Rice County to 15 per cent of potential. The Ritz-Canton Pool has been producing 16 per cent of its potential while the Schurr Pool has been producing 20 per cent of its potential. Pipe line companies are reducing their daily purchases in the Eastborough Pool in Sedgwick County to 60 per cent of the potential of the pool.

It is expected a new general proration order will be issued following a hearing in Wichita January 14. The commission plans to give particular attention to the need of new proration schedules in central western Kansas and to the Voshell Pool in McPherson County and to the Eastborough Pool. Action by the commission on the Eastborough Pool has been deferred because of the report of the operators committee that water was increasing in the field.

Negotiations have been in progress with the pipe line companies in an effort to secure a voluntary reduction in the production. An effort is also being made to secure a market outlet for producers owning wells in several pools in the stripper areas of Anderson and Montgomery Counties. For several months a large number of wells in these areas with a combined output of approximately 500 bbls. a day have been without a market. Indications were that a market outlet may be found in the near future.

Curtailment in Eastborough

Production from the Eastborough Pool, in Sedgwick County, will be curtailed, in line with the suggestion of the Kansas Public Service Commission. The Derby Oil Co. announces its desire to join in a voluntary program of reducing the output of the deep sand wells 40 per cent. The Derby Oil Co., in a letter to operators and producers for whom the company is running oil, says: "Effective January 1 we will reduce our purchases and production from the deep sand in the Eastborough Pool 40 per cent. We feel that purchasers and producers should be able to get together on methods of proration. In view of the demoralized refining industry and other conditions, we believe the suggestion of the commission should be followed for 30 to 90 days."

The White Eagle Pipe Line Co. also announced that effective January 1 the company would reduce its purchases in the Eastborough Pool, in Sedgwick County, 40 per cent.

The Derby Oil Co. and White Eagle Pipe Line Co. are the principal purchasers of crude oil in the Eastborough Pool. The White Eagle Pipe Line Co. has been taking an average of 4,200 bbls. a day and the Derby Oil Co. an average of 3,500 bbls. a day.

White Eagle Pipe Line Co. also announced that on January 1 it will reduce its purchases in the Ritz-Canton Field in McPherson County from 3,500 bbls. a day to 2,000 bbls. a day. The company purchases oil from approximately 30 leases in the field, including Mid-Kansas Oil & Gas Co., Derby Oil Co., W. C. McBride, Inc., Plains Oil Co. and others.

Both the Derby and White Eagle companies expect to increase their purchases when conditions improve.

Dangerous Water Encroachment

In the opinion of the majority of operators with production in the Eastborough Pool, in Sedgwick County, cutting down the production in the field 40 per cent of the present daily allowable, as the Kansas Public Service Commission suggested, is believed to be impracticable from an economic standpoint due to the danger of water encroachment. Almost every operator that attended the meeting held in Wichita December 29 agreed that the water encroachment was increasing at an alarming rate.

The exact figures were not available, but it was estimated that the 45 completed wells in the field are yielding approximately 10,000 bbls. of water per day. Oil production is also approximately 10,000 bbls. a day. A survey made on December 17 indicates that the pool was making 7,075 bbls. of water a day. It is believed that the water has increased 25 per cent since that time.

A committee was named to make a survey of the water conditions, including Fred Mallonee of the Magnolia Petroleum Co.; A. S. Ritchie of the Derby Oil Co., and J. A. Vickers of Vickers Petroleum Co. The committee will prepare a report and submit it to the Public Service Commission in which recommendations will be made.

Salt Water Disposal

Disposal of the salt water is an important problem confronting producers in the Eastborough Pool. At the meeting they discussed plans for the building of a water pipe line to serve the field. One or two companies may join in the construction of a water outlet, with other operators privileged to use the line on a per barrel basis.

The salt water would be carried to the Arkansas River south of the pool. A similar plan has been in operation in the Valley Center Pool in Sedgwick County for some time. Approximately 25,000 bbls. of salt water from the Valley Center Pool is being shipped into the Wichita drainage canal each day. The water is carried through a 6-inch line operated by the Gulf Pipe Line Co.

New Deep Wells

Two other deep sand wells have been added to the Eastborough Pool. The Derby Oil Co.'s No. 3 Eastborough in Section 19-27-2, an old chat well drilled deeper, is estimated at 500 bbls. a day from sand at 3,267-80 feet. Magnolia Petroleum Co.'s No. 3 J. A. Vickers, in Section 17-27-2, made 45 bbls. of oil and 5 bbls. of water in 12 hours while bailing from sand at 3,227-29 feet. Same company is also preparing to drill deeper its No. 3 Wheeler, NE cor., Section 19-27-2 which is a chat producer.

In Ritz-Canton Field

During the week the seventeenth gas well was completed in the northeastern part of the Ritz-Canton Field. Darby Petroleum Corp.'s No. 2 Fletcher, SE cor. SW SW Section 16-19-1w, gauged 31,500,000 feet of gas a day from the chat at 2,913-61 feet.

As the result of the Darby Petroleum Corp.'s No. 4 Kaegi being drilled deeper to the Viola and finding approximately a 1,500-bbl. production, the other operators are preparing to deepen their chat producers to the Viola lime horizon. Smith & Ash's No. 2 Lively, SW cor. NW NW Section 21-19-1w, was drilling deeper at 2,975 feet. It is the east offset to the discovery Viola lime well in the area.

The Texas Company's No. 1 Munn, NW cor. NE Section 12-20-2w, an old chat producer drilled deeper to the Viola, found water in the deep formation at 3,419-23 feet. It is the south offset to the Shell Petroleum Corp.'s No. 1 Miller, which made approximately 6,000 bbls. of oil a day from the chat when completed about two years ago.

A wildcat test southeast of the production in the Ritz-Canton Field was standardizing. The test, Shell Petroleum Corp. and others' No. 1 Johnson, SE cor. SW SW Section 35-19-1, found the chat at 2,935 feet, and cemented the casing at that point.

A new area is being developed southeast of the townsite of Canton, located on the extreme northeast part of the Ritz-Canton Pool, in McPherson County. About three-quarters of a mile south of the townsite, Olson Drilling Co. and Stanolind Oil & Gas Co.'s No. 1, NW cor. Section 34-19-1w, was spudding with rotary tools. Homer Detrick and Stanolind Oil & Gas Co.'s No. 1 Kelly, NW cor. SW NW Section 34-19-1w, is a location, 1½ miles south of the Canton townsite. Stanolind Oil & Gas Co. has purchased a lease on the 80 acres in the S half SE Section 28-19-1w, a quarter of a mile south of the townsite. A new location was staked a half mile north of the townsite of Canton during the week, the Title Oil Co.'s No. 1 Fletcher, NW cor. NE SE Section 16-19-1w. Material was being moved into the location.

Gas in Ellsworth County

Gas was found in Ellsworth County, in a wildcat test, estimated at 4,000,000 feet a day. Allison-Fitzwilliam Corp.'s No. 1 Stratman, in Section 23-16-10w, found the gas in the Kansas City lime at 3,093-96 feet. Water generally has been found in this formation in other tests in the area. The Allison-Fitzwilliam Corp.'s test is located about a mile east of the Gypsy Oil Co. and others' No. 1 Stoltenberg, which pumped 512 bbls. in 12 hours December 16 and 600 bbls. December 17, through 2½-inch tubing and is shut down awaiting a pipe line connection with all the storage full.

New operations include the starting of a drilling campaign in the central western part of the State. Three locations were announced for Stafford and Barton

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WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Syndicate Oil Co.'s No. 1 Boretz, NW SE SE, Sec. 3-18-12w	U.R. 3,523 ft.
Skelton Oil Co.'s No. 1 Ott, C SE SE, Sec. 16-19-14w	S.O. 3,226-28 ft.; 3,304-10 ft. wtr. drlg. 3,370 ft.
McCool et al's No. 1 Tsern, NW SE NE, Sec. 12-20-11w	Show oil 3,313-29 ft.; pumped 400 bbls. per day.
DICKINSON COUNTY	
Severe et al's No. 1 Lavengood, NE SW, Sec. 13-13-2	Drlg. 4,713 ft.
ELLSWORTH COUNTY	
R. Gear et al's No. 1 Sanberth, C SW SE, Sec. 29-16-9w	Rig.
Alyward et al's No. 1 Stratman, SE NW SE, Sec. 1-17-10w	Siliceous 3,255-71 ft.; 117 bbls. 2 hrs.; shut in; estimated 2,000 bbls.; no pipe line connections.
Aladdin Pet.'s No. 1 Stoddenberg, C SW, Sec. 22-16-10w	Siliceous lime 3,332-47 ft; estimated 1,500 bbls. a day; shut in.
FINNEY COUNTY	
National Ref. Co.'s No. 1 Wells, C SW, Sec. 13-23-30w	Drlg. 2,825 ft.
HARVEY COUNTY	
Liggett et al's No. 1 Davis, SW SE NE, S c. 7-24-1	Drlg. 1,865 ft.
KINGMAN COUNTY	
Skelly Oil Co.'s No. 1 Miles, NE cor. Sec. 30-27-10w	1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft., 6,000,000 ft. gas; at 1,133-42 ft., 3,000,000 ft. gas; showing oil 3,385 ft.; T.D. 3,441 ft.; S.D. estimated at 600 bbls. a day.
Panhandle Drlg. Co.'s No. 1 Wetheral, C SE NW SW, Sec. 20-28-10w	Rig.
McPHERSON COUNTY	
Twin Drlg. Co.'s No. 1 Farver, SW SE, Sec. 16-20-1w	Drlg. 880 ft.
Shell Pet. Corp.'s No. 1 Johnson, SE SW SW, Sec. 35-19-2w	Drlg. 2,060 ft.
MORTON COUNTY	
Hydraulic Oil Co.'s No. 1 State Land, NW SE, Sec. 22-34-43w	T.D. 3,640 ft.; temp. abd.
MORRIS COUNTY	
Allender et al's No. 1 Wycoff, C SW SE, Sec. 5-17-7	S.D. 105 ft.
Urschel et al's No. 1 Bersuch, NW SE NW, Sec. 10-17-7	Fishing 915 ft.
Hankerson et al's No. 1 Cessman, SW SE, Sec. 24-16-9	S.D. 2,625 ft.
NORTON COUNTY	
Richards et al's No. 1 Colby, Sec. 17-4-21w	Rig.
OSAGE COUNTY	
Briggs & Smith's No. 1 Wood, SE NW, Sec. 21-14-15	S.O. 2,190-2,200 ft; S.D.
RAWLINS COUNTY	
J. G. Durham et al's No. 1 Weaver, SE cor. Sec. 3-2-35w	S.D. 3,925 ft.
RICE COUNTY	
Gypsy Oil Co.'s No. 1 Stockel, C NE NW, Sec. 21-19-10w	Location.
Cress et al's No. 1 Sharp, SE NE, Sec. 13-20-10w	Show oil 3,107-15 ft.; Siliceous at 3,330-36 ft.; estimated 1,500 bbls.; shut in.
RUSSELL COUNTY	
J. Brennan's No. 1 Waly, CNL E½ NW, Sec. 29-13-11w	Location.
T. Palmer et al's No. 1 Pasek, C SE, Sec. 3-14-11w	Rig.
RUSH COUNTY	
Dewey & Mitchell's No. 1 Greenawalt, C SW, Sec. 17-19-16w	Show of oil in Conglomerate 3,335-80 ft.; plugged back to 3,325-40 ft.; estimated 150 bbls.; S.D.
SALINE COUNTY	
Twin Mounds Oil Co.'s No. 1 Weis, C W½ NE NW, Sec. 20-13-4w	S.D. 2,710 ft.
SHERIDAN COUNTY	
Flo et al's No. 1 Shoemaker, SE SW, Sec. 27-7-26w	Drlg. 4,040-45 ft; wtr; testing.
STAFFORD COUNTY	
Rosenthal, Stanolind and Amerada's No. 1 Gray, C NE, Sec. 11-24-31w	S.O. 3,829-41 ft; T.D. 3,891 ft; S.D. 500 ft. oil in hole.
STEVENS COUNTY	
Argus Prod.'s No. 2 Christopher, C NE. Sec. 16-33-39w	S.D. 5,521 ft.
SUMNER COUNTY	
Tighe et al's No. 1 Thieson, C NW SE SE, Sec. 22-34-2	S.G. 2,808-15 ft.; S.D.
Trees Oil Co. and Shell's No. 1 Springate, NE SE SW, Sec. 6-34-2	S.D. 2,560 ft.
Spencer et al's No. 1 Penwell, NW SE NE, Sec. 16-3-3	S.D. 4,384 ft.
WASHINGTON COUNTY	
Sincox et al's No. 1 Penwell, NW SE NE, Sec. 16-3-3	S.D. 1,720 ft.

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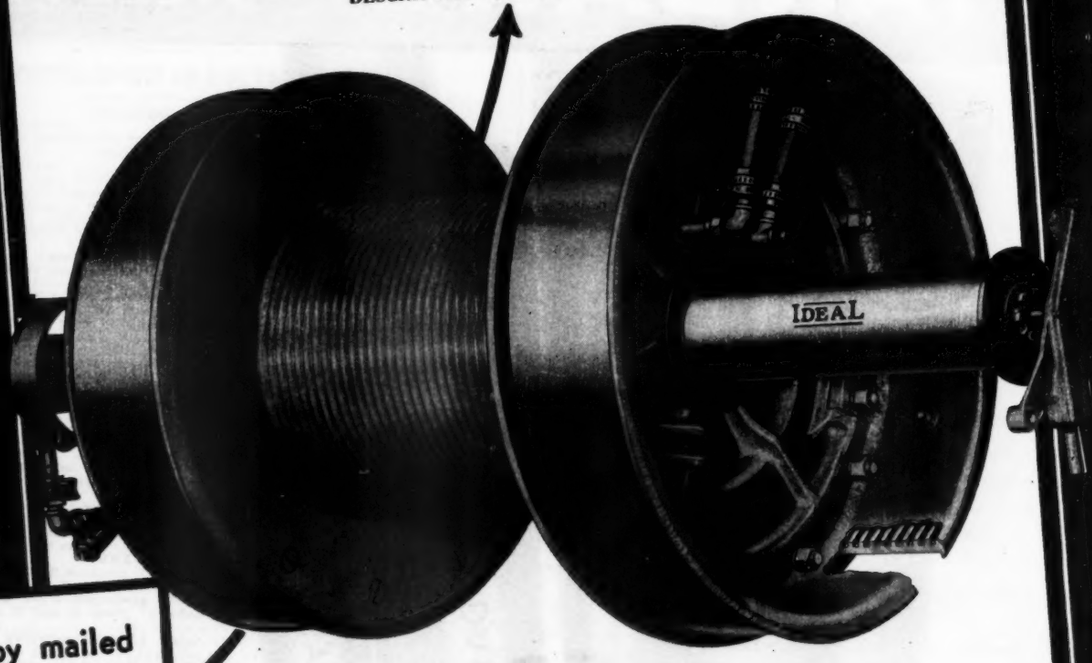

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Offsets Are Started in Pettus Extension

Area Still Cut Off From Damac Discovery by Dry Hole. Laredo Tests Delayed Waiting Connections. Dry Hole in Darst Extension

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Jan. 4.—The holiday season saw no new field presented to Southwest Texas, a thing that has happened almost every year since Edgar B. Davis brought in the Luling Field back in 1922. Some extension wells have helped out the appearance of fields but no out and out wildcat has opened up anything new in Southwest Texas for many weeks.

The Texas Company's No. 1 Gremmel came in over the week-end and gauged about 1,000 bbls. of oil a day at a total depth of 3,908 feet, located two locations west and one north of the nearest production in the Pettus extension, which is the Buck Oil Corp.'s No. 1 Ray and it in turn is over a half mile west of the nearest production which is the discovery well. The Texas Company's No. 1 Gremmel is good for 1,000 bbls. on five-eighths-inch choke with 320 pounds pressure on the tubing and 830 pounds on the casing. It is responsible for offsets south and east, the south offset being by the Buck Oil Corp. drilling at around 1,000 feet at the close of the week and the east offset by Slick-Seeligson, Inc., which was about ready to spud in.

C. R. M. Drilling Co. and H. H. Weinert are moving in to drill their No. 1 Ray approximately two locations west of the Buck Oil Corp.'s No. 2 Ray. This promises to give this new producing spot considerable activity for the new tests if producers will force additional offsets.

This area is still cut off from the Damac discovery well over a half mile east by Weinert's No. 1 Ray, a dry hole drilled half way between them but J. M. Davis is rigging up on his No. 1-B Ray a little south and east of the Weinert dry hole and they hope to close up the gap and prove that production extends all the way across.

At the east end of the older area of the field United Production Co. which carried No. 39 Ray down 7,569 feet has plugged back to 3,910 feet and completed a 75-bbl. well.

The disappointment of the week is Al Buchanan's No. 1 Mary Dorenfield 1,000 feet east of the Simms gasser on the Holzmark farm and 10 miles south of the Pettus Field. No. 1 Dorenfield is a failure at a total depth of 3,602 feet and with an elevation about the same as No. 1 Holzmark which came in a big gas well at 3,552 feet. Hughes and others' No. 1 Martin, a half mile south of the Simms gasser, was reported last week as a failure and has been abandoned at 3,651 feet. Buchanan's well got a good looking core but tested very little after casing was set but later with a total depth of 3,533 feet built up a little gas pressure and was deepened but failed to make a well and the casing is being pulled.

Laredo District

Several tests in the northeastern part of Zapata County which were on the sand with casing set and ready to be brought in a week ago have been delayed and allowed to stand while pipe line connection was being extended to them. This is in the Escobas Pool. In the area known as the Andrews gas pool a little north and west of the old Mirando Valley Pool, Lowe and Rogers have completed their No. 1 Prudencia Benavides at 1,454 feet for about 15,000,000 feet of gas. It is their second test in that district, the other having been completed earlier last year and they open in reality a new pool a mile or more west of the Andrews Petroleum Co.'s gasser.

United Production Co.'s No. 1 Measles, in Survey 207 and in the heart of the Jennings gas field, went to a total of 2,144 feet but has plugged back to 1,340 feet and came in for about 7,000,000 feet of gas with 500 pounds pressure but water broke in and it is recementing the casing.

In the northern part of the Laredo district with the exception of two tests being completed in the Schoolfield-O'Byrne extension and the Vacuum making another location for a wildcat nothing unusual has developed. Magnolia's No. 7 Wilson, the farthest south test in the Schoolfield-O'Byrne extension which missed the pay in the regular sand, is now down 3,000 feet and still drilling and about 700 feet below the producing horizon of the field.

Vacuum Oil Co.'s new location is in the southeast corner of Survey 96 and is approximately 6 miles east and a little south of the wildcat the company drilled earlier in the year in Survey No. 293 that brought in a field producing at a little below 1,700 feet. The location is also about 2½ miles southwest of Thomas & Tarver, Inc.'s No. 1 Welder-Wood that has been having some good showings at around 2,200 feet but has been unable yet to make a well.

These and a wildcat that O. W. Killam is starting on the Sutherland ranch and the Garvis test over near the Palangano salt dome constitute all the wildcat activity at this time in Duval County.

Balcones Fault Zone

In the Balcones fault zone the new extension pool to the Darst Creek Field got its first dry hole last week. Humble Oil & Refining Co.'s No. 2 Dan Denman tested sulphur water in the Edwards lime at a total depth of 2,577 feet. It topped the Edwards at 2,571 feet and is an east offset to John F. Camp's No. 1 Dan Deman which made a good oil well in the Edwards lime. The extension pool to date consists of 4 producing oil wells, 2 belonging to John F. Camp and 2 belonging to Humble Oil & Refining Co.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location—Remarks:

Glen Mathis' No. 2 Mrs. C. Martin, 100 ft. SE of No. 1..T.D. 2,980 ft.; S.D.

BLANCO COUNTY

Hardy-Sitton's No. 1 McMillan ..... T.D. 602 ft.; S.D.
Theo. Hicks' No. 1 Specht, 1,500 ft. from S line, 500 ft. from W line of farm, in Thomas M. Fowler Sur. No. 27 in extreme south point of county ..... T.D. 1,650 ft.; S.D.
Liles Adams et al's No. 1 Luders, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155 ..... T.D. 1,100 ft.; standing.

BASTROP COUNTY

S. R. Mart's No. 1 Bahme, 1,650 ft. to E line, 1,300 ft. to S line of farm, James Standifer Sur. ..... T.D. 1,298 ft.; set csg.
Sun Oil Co.-Humble Oil & Ref. Co.'s No. 1 Powers, 400 ft. to N and E lines of Blk. 197, Bastrop town tracts. T.D. 1,170 ft.; drlg.
Texas Dev. Co.'s No. 1 C. H. Ray, 800 ft. from W line and 400 ft. from S line of farm, in Thos. Christian Sur. ..... T.D. 2,635 ft.; drlg.

BELL COUNTY

Bridwell et al's No. 1 Nichols, 150 ft. to W and N lines of farm, N. Roberts Sur. ..... T.D. 330 ft.; drlg.
Bridwell et al's No. 1 G. A. White, 550 ft. to E line, 150 ft. to S line of farm, Nancy Roberts Sur., 4 miles SE from Belton ..... T.D. 450 ft.; drlg.
W. A. Klecka's No. 1 W. W. Thornton, 500 ft. from N line, 1,058 ft. from E line of tract in R. Roberts Sur. ..... Location.
J. W. Riley's No. 1 W. S. Chaffin, in M. Griffin Sur. ..... T.D. 365 ft.; S.D.
Jas. Scroggins' No. 2 Warrick, Ingram Sur. ..... T.D. 1,432 ft.; S.D.

BEE COUNTY

Alexander et al's No. 1 McFall, 3 miles S Skidmore..... T.D. 2,100 ft.; standing.
Humble O. & R. Co.'s No. 1 Laura Thompson, 6,360 ft. from N line, 15,100 ft. from W line of tr. in Garrett Roache Sur., S part of county ..... T.D. 4,725 ft.; drlg.

BEXAR COUNTY

Alamo Natural Gas Co.'s No. 2 Gembler, 1,000 ft. S of No. 1 in A. Manchaco Sur. No. 51 ..... Location.
Amsden-Ingersoll-Miller's No. 1 Strumberg, 450 ft. to W line, 1,020 ft. to N line of tract, 13 miles SW of San Antonio ..... T.D. 214 ft.; drlg.
J. E. Anderson's No. 1 Suburban Irrigated Farms, 500 ft. to N line, 600 ft. to E line of C. Logan Sur. ..... T.D. 1,745 ft.; drlg.
Eckert et al's No. 1 Edwards, 150 ft. to N and W lines of farm in Martinez Sur. ..... T.D. 110 ft.; set surface csg.
Callahan Final Oil Co.'s No. 1 B. H. Buck, 900 ft. to E line, 2,200 ft. to S. line of farm, in J. M. McGamley Sur. ..... T.D. 650 ft.; drlg.
Dr. Ewell Neil's No. 1 J. Watson, 600 ft. from W line, 1,700 ft. from S line of B. Martinez Sur. ..... T.D. 2,250 ft.; drlg. chalk.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio ..... T.D. 1,150 ft.; S.D.
Tri-State Oil Co.'s No. 1 E. B. Carruth, 2,500 ft. from S line, 2,560 ft. from E line of tr. in F. Bolen Sur.... T.D. 750 ft.; standing 600 ft. in oil.
S. W. Blount's No. 1 S. A. Land Co., I. Perez Sur., 1,000 ft. to N line, 450 ft. to W line of tract ..... T.D. 500 ft.; S.D.
Van Duyn et al's No. 1 Bradden, 5,000 ft. N of Medina River, 350 ft. to E line of tract, 8 miles W of San Antonio ..... T.D. 650 ft.; drlg.

CALDWELL COUNTY

Cole & Moseley's No. 1 Pierce, 150 ft. to NW and SW lines of tract, Solomon Seal Sur. ..... Moving in rig.
Meyer's No. 1 G. C. and W. Walker, Solomon Seal Sur... Making location.
M. O. Rayor's No. 2 N. L. Dunlop, 350 ft. to NW line, 150 ft. to NE line of farm, Solomon Seal Sur. ..... T.D. 2,503 ft.; plugging back.
Charles H. Wagener's No. 1 Rodenberg ..... Location.

(Continued on Page 55)

SOUTHWEST TEXAS PROVEN AREAS

DOBROWOLSKI POOL—BEXAR COUNTY

Company, farm and location—Remarks:

Williams et al's No. 2 Strunk, Juan Montez Sur. ..... Rigging up.

NORMANNA POOL—BEE COUNTY

C. F. Nichols' No. 1 Hicks ..... T.D. 1,992 ft.; rigging to deepen.

PETTUS POOL—BEE COUNTY

Buck Oil Corp.'s No. 2 Ray, 628 ft. from E line, 150 ft. from N line of lease, S offset to Texas No. 1 Gremmel ..... T.D. 700 ft.; drlg.
C. R. M. Drlg. Co.'s No. 1 Ray, 150 ft. to N and E lines of lease ..... Location.
C.R.&M. Drilling Co. and H. H. Weinert's No. 1-B Ray, 150 ft. from N and E lines of lease in J. W. Williamson Sur. ..... Moving in rig.
United Prod. Co.'s No. 39 Ray, 1,130 ft. to SE line, 2,396 ft. to SW line of T. Hanson Sur. ..... T.D. 3,910 ft.; comp. 75 bbls.
H. H. Weinert's No. 1 Ray, 150 ft. N and E lines of lease in Jno. W. Williamson Sur. ..... T.D. 4,557 ft.; abnd.
J. M. Davis et al's No. 1-B Ray, 150 ft. to N and E lines of 10-ac. lease, next south of Weinerts, John W. Williamson Sur. ..... Rigging up.
Houston Oil Co.'s No. 3 Portis, 300 ft. E of No. 2, A. Smalley Sur. ..... Location.
T. B. Slick Estate's No. 2 Ray, 330 ft. to W line, 150 ft. to S line, Geo. A. Kerr Sur. ..... T.D. 3,913 ft.; comp. 240 bbls. oil, 10,000,000 ft. gas.
Slick-Seelingson, Inc., No. 1-B Ray, 150 from S and W lines of George A. Kerr Sur. ..... Moving in rig.
The Texas Co.'s No. 1 E. Gemmel, 150 ft. to S and E lines of tract in south John Pace Sur. ..... T.D. 3,908 ft.; comp. 1,000 bbls. oil.

SIMMS POOL—BEE COUNTY

Al Buchanan's No. 1 Mary Dorenfield in John Lyford Sur., 150 ft. to W line, 2,305 ft. to N line of tract.... T.D. 3,602 ft.; abnd.
Hughes et al's No. 1 Martin, 1,000 ft. S of Simms Oil Co.'s No. 1 Holzmark in John Lyford Sur. ..... T.D. 3,563 ft.; abnd.

COOKSEY POOL—BEXAR COUNTY

Chiquita Oil Co.'s No. 3 Cooksey, 480 ft. from E. line, 330 ft. from S line of tract in J. W. Rialls Sur. ..... Location.
Witherspoon Oil Co.'s No. 2 Pollock ..... T.D. 1,470 ft.; comp. 15 bbls.

BRUNER POOL—CALDWELL COUNTY

Joe Bruner's No. 1 Malone, 150 ft. to N line, 750 ft. to W line of tr., A. Floyd Sur. ..... T.D. 2,704 ft.; drlg.
John Storey's No. 1 Dickerson, 150 ft. to N of center of S line of tract, John R. Rains Sur. ..... Rigging up.

SCHOOLFIELD-O'BYRNE POOL—DUVAL COUNTY

Duval Oil Corp.'s No. 7 Bishop Cattle Co., 1,319 ft. from W line, 1,666 ft. from N line to Sur. 135..... T.D. 2,308 ft.; set csg.
Magnolia Petroleum Co.'s No. 7 Wilson, 1,340 ft. to W line, 1,150 ft. to N line of Sur. No. 134 ..... T.D. 3,000 ft.; drlg.
The Texas Company's No. 4 Bishop Cattle Co., 300 ft. from N line, 825 ft. from W line of lease, Sur. 135. .T.D. 2,364 ft.; comp. 720 bbls.

COLE POOL—DUVAL COUNTY

Cole Petroleum Co.'s No. 73 Benavides, Blk. 8, Section 19 of Cole Subd., Mariana Arispe grant ..... T.D. 1,730 ft.; comp. 100 bbls.
Cole Petroleum Co.'s No. 74 Benavides, 144 ft. from NW line, 65 ft. from NE line of Blk. 8, Sec. 19, Cole Sub. of Mariana Arispe grant ..... T.D. 500 ft.; drlg.

SLICK POOL—GOLIAD COUNTY

C. R. M. and H. H. Weinert's No. 1 Stopke, 660 ft. from S and W lines ..... Rigging up.

CARTWRIGHT POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 14 Cartwright, 1,000 ft. W of No. 23 Cartwright ..... T.D. 5,400 ft.; standing
Houston Oil Co.'s No. 24 Cartwright, 784 ft. N of No. 4, J. M. Colchado Sur. ..... T.D. 3,900 ft.; drlg.

(Continued on Page 55)

California Output Will Be Held Down

Believed Producers and Refiners Will Overcome Last Hurdle and Experience Better Times in New Year. Agency Statement

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Jan. 4.—California's crude oil curtailment program, which contemplates a reduction in state production to 456,700 bbls. per day for the first six months of 1932, will not be changed unless conditions improve despite the strenuous objections of small producers that they cannot economically reduce production to the new maximum allowable. The Operators General Committee on Statewide Curtailment recently ordered operators to reduce state production to the new allowable of 456,700 bbls. per day effective December 21, 1931. Independent producers flatly refused to accept this additional cut and at the request of the Oil Producers Sales Agency were permitted to adhere to the previous allowable of 487,500 bbls. per day pending a review of the economic report of the general committee.

Since communicating with independent producers on December 22, 1931, the executive committee of the Oil Producers Sales Agency has conducted a minute survey of the economic report and the establishment of the potential daily production of California fields. As a result of this investigation, the executive committee of the sales agency has informed independent producers that it has concluded "that the figure set by the Economic Committee of 456,700 bbls. as the daily requirements of new crude closely approximates the apparent demand of the Pacific Coast and offshore business and that all oil produced in excess of this amount will probably be added to storage, which is now excessive, unless conditions change for the better. If such a change becomes apparent it should be recognized by the General Curtailment Committee and the state's allowable daily production increased."

No Undue Hardship

The executive committee of the agency also informs producers "that in general it is fair and proper to apply the same measuring stick to all producers alike, but there is a point where a question arises as to the fairness of applying a percentage cut to a lease or well which has reached or is closely approaching the dead line and cannot be profitably produced. It is now our understanding in such cases that the General Oil Conservation Committee and Umpire Neal Anderson will give sympathetic co operation in applying curtailment to prevent any undue hardship being imposed upon this class of producer. Although there are a considerable number of producers that have reached or are approaching this classification, we must not, in viewing their condition, lose sight of the fact that curtailment of production is necessary to preserve the industry, to prevent waste and to give it a semblance of stability. Any special consideration extended to the small producer will naturally have to be absorbed by the balance of the industry. It is only fair therefore for the small producer, in viewing his case, to realize that he should to the best of his ability do his part in bringing about a condition that is of mutual benefit to the industry and to the public.

"In view of the above it is the opinion of your officers and executive committee that each member of the agency, and in fact every producer, should put his shoulder to the wheel to bring about an immediate curtailment that will approximate the state's need for current production so that it may become effective at the turn of the new year. It is our belief that this is necessary to prevent a repetition of the excessive depression in which the industry has found itself with production at a point where demand is less than supply and additions are being made to already excessive stored production. The umpire is making a very close study of the condition of the small producer and soon after the first of the year will, we believe, be in a position to give him a hearing and sympathetic and helpful consideration."

The foregoing is of particular interest because the California oil industry is standing on the threshold of what should be a rather successful year to both producers and refiners. To reach this objective, however, producers must reduce state production to economic requirements and refiners and marketers correct the marketing situation. As the new year opens, those in close touch with the situation feel confident that producers and refiners will successfully complete what appears to be the final hurdle and thus remove the last obstacle to better prices and a better degree of stability.

To Avoid Spring Price War

It is imperative that state production be reduced to the maximum allowable of 456,700 bbls. per day as soon as possible as this will go a long way toward eliminating the usual spring price war which has characterized conditions on the Pacific Coast during the past few years. If this can be averted, the California oil industry will experience better times as a preliminary survey indicates a probable reduction in Pacific Coast stocks to the economic level recommended at the last annual meeting of the American Petroleum Institute in Chicago. This report presumed that if an accumulation could be prevented during the winter and spring months that stocks of crude and refined oils would be reduced to economic levels during the summer and fall months of 1932. Because of a possible repetition of the disastrous gasoline price war which occurred during 1931, a concerted attempt is being made to stabilize prices as soon as possible in the new year. The Union Oil Co. incidentally came out January 2 with a new orange colored gasoline, which has an exceptionally high octane rating. The Standard Oil Co. of California introduced the octane rating factor in its advertising campaign on the Pacific Coast just before Christmas.

Kettleman Hills

The Petroleum Securities was prevented from undertaking corrective work to eliminate the salt water in No. 1 Burbank, the company's discovery well in the middle dome of Kettleman Hills, due to a persistent rain extending over the past week. The terrain at Kettleman Hills is quite rough and the rain washing down the rugged slopes obliterated the trucking road at several places and forced a temporary suspension of work. The Petroleum Securities succeeded in killing No. 1 Burbank last week, the final production on December 23, being 1,245 bbls. of 51.8 gravity oil and 1,200 bbls. of salt water, in addition to 33,000,000 feet of natural gas. Mechanical trouble prevented the crew from killing the well at an earlier date as considerable difficulty was experienced in mudding off the flow. During the mudding off process immediate returns of mud were secured indicating the probability that the 5¾-inch oil string has parted rather high up in the hole.

The Department of the Interior has revoked approval of drilling permits in the middle dome and will stand pat until a unit plan of development is ratified by all interested parties. The Petroleum Securities has not yet received a certificate of compliance and it is reported that official sanction will be withheld until No. 1 Burbank is completed in a satisfactory mechanical manner, at which time the Department of the Interior will order it shut in until consummation of a satisfactory unit plan of development. The Superior Oil Co. has not yet received notice of revocation of the drilling permit covering the Downing property in the middle dome and was still engaged in rig construction for No. 2 Downing, the permit of which is held by the Bolsa Chica Oil Co. The Standard Oil Co. is still drilling in its middle dome test. No. 6-29-V, in Section 29-23-19, at 6,550 feet.

North Dome

Rain likewise affected drilling operations in the north dome of Kettleman Hills during the past week, although in this case where wells are actually drilling it merely slowed up work from time to time. The Superior Oil Co. is making preparations to resume drilling operations in the Bolsa Chica Oil Co.'s No. 1 Ferguson in the north dome after a suspension of work several months ago. This well, located just outside the outer line of the acreage involved in the unit plan of development, is 7,704 feet deep. The Bolsa Chica Oil Co. carried this well down to 7,694 feet and suspended drilling operations on April 1, 1930, when the U. S. Geological Survey approved the permit and automatically brought this well into the group participating in the monthly distribution of net proceeds resulting from the sale of oil and gas before the Kettleman North Dome Association was organized. The Superior Oil Co., which entered into an operating agreement with the Bolsa Chica last summer, subsequently carried No. 1 Ferguson down to 7,704 feet and suspended drilling operations at that point. The Superior has now decided to resume work on this project in an effort to pick up the productive Temblor. It is needless to say that this well will require exceptionally deep drilling, especially in view of the fact that the brown shale, which overlies the Temblor, has not yet been encountered. If the Superior succeeds in developing commercial production in No. 1 Ferguson, the company will be reimbursed for twice the drilling cost and a portion of the acreage adjoining the well included in that held by the Kettleman North Dome Association. The two most interesting drilling projects under way in the north dome at the present time are No. 1 Blauvelt and No. 1 Elsinore of the North American Oil Consolidated. Both of these projects, located on the north flank of the Kettleman anticline, are situated in Section 36-21-17. No. Blauvelt is showing oil and gas on the ditch at 9,460 feet and will probably succeed in securing commercial production. No. 1 Elsinore picked up the top of the variegated zone at 8,210 feet, on which basis it will be somewhat deeper than No. 1 Blauvelt.

During November, Kettleman Hills operators delivered 2,757,667,000 feet of natural gas to pipe line carriers, an increase of 221,769,000 feet over the amount delivered during October. The Pacific Gas & Electric Co. picked up 1,463,062,000 feet of natural gas during November, the Southern California Gas Co. 679,591,000 feet and the Southern Fuel Co. 615,004,000 feet. Gas blown to the air in November at Kettleman Hills approximated 510,081,000 feet, an increase of 235,950,000 feet over October. Natural gasoline production of Kettleman Hills plants totaled 10,617,714 gallons during November, which is a decline of 1,261,701 gallons from the October output.

Dominguez

Two wells were put on production in the Dominguez Field during the past week, one of which registered substantial production. This was the Union Oil Co.'s No. 17 Hellman, which came in flowing at the rate of 2,250 bbls. per day from the third Callender zone at 4,678 feet. The oil from this new well is clean and tests 31.6 degrees. The second well finished during the current week is No. 41 Reyes of the Shell Oil Co., which registered an initial daily production of 440 bbls. of clean 33.4 gravity oil from 4,562 feet. The Shell experienced considerable difficulty in effecting a satisfactory water shutoff in this project, but finally succeeded after three attempts. The flow has been temporarily killed in order to clean out to bottom, at which time the well will be returned to production.

Drilling operations in Los Angeles Basin fields have declined to such a low point that there is very little work of any special importance under way in this

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	.....	68,690
Fuel oil	.....	.....	.....	.....	.....	71,950
Diesel and gas oil	95,050	13,579	.....	.....	1,661,853	4,097,796
Gasoline	181,098	25,871	194,801	27,829	13,279,773	19,363,695
Kerosene	14,450	2,064	.....	.....	202,384	.....
Coastwise—						
Crude oil	263,779	37,683	178,310	25,473	20,690,043	15,477,051
Fuel oil	549,368	78,481	447,723	63,960	14,202,246	18,976,194
Diesel and gas oil	149,222	21,319	5,704	815	1,581,111	1,635,433
Gasoline	168,459	24,066	347,576	49,654	14,332,194	12,716,564
Kerosene	3,647	521	.....	.....	322,009	166,262
Naphtha distillate	.....	.....	.....	.....	4,952	.....
Exports—						
Crude oil	58,587	8,370	10,076	1,439	7,021,978	6,911,773
Fuel oil	143,791	20,542	248,236	35,462	13,139,315	17,421,100
Diesel and gas oil	31,359	4,480	39,625	5,661	3,440,582	4,342,519
Gasoline	99,041	14,149	59,932	8,562	8,355,954	15,253,026
Kerosene	.....	.....	.....	.....	1,645,733	3,228,711
Lubricants	.....	.....	.....	.....	36,353	59,179

TANKER SHIPMENTS, SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	279,038
Gasoline	.....	.....	.....	.....	1,187,834	1,144,921
Kerosene	.....	.....	.....	.....	.....	10,750
Lubricants	.....	.....	.....	.....	38,236	37,796
Coastwise—						
Fuel oil	118,645	16,949	85,039	12,147	3,750,890	3,343,247
Diesel and gas oil	.....	.....	.....	.....	438,552	362,474
Gasoline	.....	.....	.....	.....	4,244,319	4,355,915
Kerosene	.....	.....	.....	.....	287,045	222,235
Naphtha distillate	.....	.....	.....	.....	49,730	.....
Exports—						
Crude oil	.....	.....	.....	.....	494,511	59,993
Fuel oil	12,760	1,823	.....	.....	1,602,638	1,161,782
Diesel and gas oil	.....	.....	.....	.....	606,231	539,646
Gasoline	.....	.....	95,451	13,636	4,474,039	4,191,456
Kerosene	.....	.....	.....	.....	914,099	593,097
Lubricants	.....	.....	.....	.....	35,693	33,579

section of the state. The Standard Oil Co.'s development program in the West Coyote Field, for instance, is only of a routine nature and is being done only because of lease requirements and because of the desire to keep a certain number of drilling crews employed. The company is drilling four wells in this field at the present time, one on the Emery lease and three on the Murphy Coyote lease. The Standard's deep test on the Bastanchury lease, 1 mile east of the West Coyote Field, continues to produce approximately 200 bbls. per day from 5,688 feet, although this well has from time to time shown short intermittent flows.

Playa Del Rey

There are only five drilling projects under way in the Playa Del Rey Field at present and all but one of these should be finished within 30 days. These new wells will not exert any great effect on field production due to the depleted condition of the producing horizon. The Allison Oil Syndicate is making preparations to make a production test on its deep well located on the north flank of the Inglewood Field and, while there have been some showings of oil and gas on the ditch, the outlook for production at 5,750 feet is not unusually promising. No. 1 Sentous of the Baldwin Hills Syndicate in the same field is not yet deep enough to pick up the pay. The Continental Oil Co. is rotating in the Selover oil zone in the Seal Beach Field of Los Angeles Basin and will probably have this well, No. 1 Selover, back on production within the next few weeks.

Rincon

The General Petroleum, having already established a drilling record so far as depth is concerned on a tideland project, may eventually exceed the deepest well drilled in the Rincon Field of Ventura County unless production is developed in its No. 2 on tideland No. 55 before this point is reached. This well of the General Petroleum is the second project to be drilled on the N. C. Needham tideland lease located out beyond the tideline in the open ocean at Rincon. It is approximately 1,700 feet from the tideline and will extend the proven limits of the Rincon Field if deep commercial production is developed. There were no developments of particular importance in the Ventura Avenue Field during the week, although the Associated conducted a preliminary flow test on No. 83 Lloyd, finished at 8,143 feet. This well will require further work, as the initial daily production, 150 bbls., showed a cut of 25 per cent. The Elwood Field of Santa Barbara County is likewise inactive, No. 7 on tideland permit No. 90 of the Elwood Exploration Co. at 3,124 being the only project under way in that area.

The Belridge Oil Co. is building rig for a new well to be drilled in Section 35-27-20 and this project will be spudded during the latter part of January. This company's deep test in Section 27-27-20 will probably be listed for early abandonment if the limited data available at present reflect its true status. The Belridge Oil Co. has been withholding information on the status of this well, but field scouts have come to the conclusion that the company has penetrated the Kreyenhagen shale immediately underlying the Temblor, which has been found productive in the North Belridge Field as well as in the north and middle domes of the Kettleman Hills anticline. With the exception of the work being done by the Belridge Oil Co., drilling operations in the North Belridge Field are at a standstill. In the South Belridge Field, the General Petroleum is still in the brown shale at 7,775 feet in No. 1 Berry, a deep test in Section 30-28-21. This well has penetrated several thousand feet of brown shale and should encounter the Temblor at its base if the hole can be carried deep enough. There are no drilling operations of any kind under way in the Lost Hills Field and this area will probably remain dormant for some time.

The Fruitvale Field of Kern County is expected to reflect increased development early in the year, particularly if any of the drilling projects now under way register commercial production. The next potential completion in the Fruitvale Field is Al Jorgenson's No. 1 Fruitvale in Section 23-29-27, as this project has been in the oil sand for the past 50 feet. The Sea Hawk Petroleum Co.'s No. 1-B should pick up the pay within a few days if it is to secure commercial production as it is already slightly deeper than Jorgenson's initial test. Two other wells are making hole in the Fruitvale Field at present and rotary equipment is being rigged up for early work in two more. The Round Mountain Field has shown a slight increase in drilling during the past few weeks and two or three additional projects will be started late in January.

The San Pedro Point Firmin Oil Co.'s No. 1 Kellerman, a recent completion in the Santa Paula district of Ventura County, failed to show a sustained flow at 3,850 feet and the company is making preparations to install pumping equipment. The Union Oil Co.'s No. 1 Calumet in the Shields Canyon district of Ventura County is scheduled to be started some time during the next 30 days, provided a geological survey now under way justifies the drilling of a conclusive deep test. In the Santa Maria area of Santa Barbara County, the Western Gulf Oil Co. has reached a depth of 8,550 feet in No. 1 Bradley, a wildcat being drilled in that area. In the Calabasas area the Simi Oil Co. is making preparations to make a production test on its No. 1 at 4,650 feet.

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.	T.	R.	Depth	Status—
Hines Re... No. 1 Ocean Park, Los Angeles Co.	3-	2-	15	7,414	suspended
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12-	2-	15	6,238	suspended
Westwood Oil Co., No. 2 Hermosa, Los Angeles Co.	6-	4-	14	2,151	suspended
Baxter Pet., No. 1 Hermosa, Los Angeles Co.	5-	4-	14	rig	suspended
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24-	3-	15	2,700	suspended
Pacific Shore Oil Co., No. 1 Lawndale, Los Angeles Co.	20-	3-	14	rig	suspended
Lawndale Pioneers, Inc., No. 1 Peck, Los Angeles Co.	20-	3-	14	5,304	sd. sh. drilling
Mohawk Pet., No. 1 El Nido, Los Angeles Co.	29-	3-	14	154	sd. drilling
Wilmington Consd., No. 1 Watson, Los Angeles Co.	17-	4-	13	1,012	cleaning out
Ranger Pet. Co., No. 1 Watson, Los Angeles Co.	28-	4-	13	3,744	suspended
Avalon Park Dev. Co., No. 1 Watson, Los Angeles Co.	17-	3-	13	rig	suspended
Pedro Pet. Corp., No. 1 San Pedro, Los Angeles Co.	14-	5-	14	rig	suspended
Brubaker, W. O., No. 1 Van Nuys, Los Angeles Co.	11-	2-	15	2,700	suspended
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27-	2-	10	2,200	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30-	2-	9	2,250	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30-	2-	12	1,370	suspended
Jones, W. L., No. 1 Bell, Los Angeles Co.	31-	2-	13	280	sd. sh. drilling
Weist Oil Co., No. 1 Montebello, Los Angeles Co.	34-	1-	11	4,902	suspended
Blinn & Gray, No. 1 Montebello, Los Angeles Co.	6-	3-	11	5,060	to set pipe
Wardell & Menichini, No. 1 Montebello, Los Angeles Co.	7-	3-	11	rig	rigged up
Yellowstone Oil Co., No. 1 Alhambra, Los Angeles Co.	24-	1-	13	3,910	suspended
Yellowstone Oil Co., No. 2 Alhambra, Los Angeles Co.	19-	1-	12	2,015	suspended
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	26-	1-	17	1,004	cleaning out
Caballero Estates, No. 1 Calabasas, Los Angeles Co.	23-	1-	16	1,460	suspended
Simi Oil Co., No. 1 Calabasas, Los Angeles Co.	18-	1-	17	4,650	sd. sh. drilling
Simi Oil Co., No. 2 Calabasas, Los Angeles Co.	18-	1-	17	260	sd. sh. drilling
Marble, Willard, No. 1 Chatsworth, Los Angeles Co.	6-	2-	16	1,302	hd. sd. drilling
Ajax Pet., No. 1 Newport, Orange Co.	21-	6-	10	6,401	br. sh. drilling
Vaqueros Major, No. 1 Tideland, Orange Co.	32-	5-	11	1,022	suspended
Beck, Alfred, No. 1 Corona, Riverside Co.	8-	4-	6	1,110	suspended
Spindletop Oil Co., No. 1 Salton Sea, Riverside Co.	25-	7-	10	3,493	cleaning out
Duncan, N. L., No. 1 Sagebrush, Riverside Co.	8-	4-	6	1,157	suspended
Colan Dev. Co., No. 1 Redlands, San Bernardino Co.	25-	1-	2	2,392	fishing
Mason Oil Co., No. 1 Salton Sea, Imperial Co.		1-17-	15	685	sd. sh. drilling
Woods, D. H., No. 1 Salton Sea, Imperial Co.		7-11-	16	670	sd. sh. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-	13-	4	2,519	suspended
South Bay Oil Co., No. 1 Border, San Diego Co.	31-	18-	2	1,243	suspended
Itasca Pet. Co., No. 1 Mesa, San Diego Co.	33-	18-	1	1,700	hd. sd. drilling
Carr, O. K., No. 1 Capistrano, San Diego Co.	13-	6-	8	5,250	suspended
Oklahoma Oil Corp., No. 1 Palms, San Diego Co.	25-	11-	8	510	suspended

GOOD GAS COMPLETION IN MICHIGAN FIELD

MOUNT PLEASANT, Mich., Jan. 2. James A. McKay's No. 2 James A. Bicknell No. 2 farm, NW SE NW, Section 6, Grant Township, Clare County, has been gauged at 9,000,000 feet from the Marshall formation at 1,408 feet. The Pure Oil Co.'s No. 4 Stanley E. Willie farm, NW SW, Section 4, Broomfield Township, Isabella County, is estimated at 3,500,000 feet, also from the Marshall formation.

A test of some importance is to be drilled a mile south and 4 miles west of Clare, in Section 3, Gilmore Township, Isabella County, by the Lima Oil & Gas Co., of Lima, Ohio. The rig is already up and the tools are reported on the ground. The test is some distance from oil or gas production in that section of the county.

Much leasing is being done in the territory around Shepherd along the boundary between Coe and Chippewa Township, in Isabella County, and south of Mount Pleasant, and a location is reported for the first test in that particular area, although a number of dry holes have been found out of Shepherd.

PROSPECTING IN SINGAPORE

The Singapore Oil Syndicate, Ltd., affiliated with the Royal Dutch-Shell group, is conducting test drilling operations at Klias Peninsula, Straits Settlements. Geological reports have indicated the presence of oil in the area under exploration, but at last reports no commercial yield had as yet been obtained from the drilling operations.

SHELL BUYS ACREAGE IN KETTLEMAN HILLS

LOS ANGELES, Calif., Jan. 4.—For a consideration involving $4,500,000 payable over a period of years the Shell Oil Co. has acquired leases on 1,280 acres in the Kettleman Hills North Dome. The Shell's new acreage was purchased from the George F. Getty Oil Co. and consists of the Armstrong leases embracing 320 acres of government leases and 960 acres of B leases. Armstrong, the original lessee, retains an overriding royalty of 7½ per cent in the A leases and a smaller interest in the B leases. These leases are integral parts of the Kettleman North Dome and from a percentage standpoint consists of 7 4-100 per cent of the entire holdings of the association.

Previous to this deal the Shell already had a prorata share in the Kettleman North Dome of 4 8-100 per cent. Shell's interest is exceeded only by Milham Exploration Co., a subsidiary of the Seaboard Oil Co., Continental Oil Co. and the General Petroleum Corp., a subsidiary of the Standard Oil Co. of New York.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.	T.	R.	Depth	Status—
Barnsdall, No. 1 Los Alamos, Santa Barbara Co.	31-	8-	33	....	building road
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5-	9-	33	8,550	br. sh. drilling
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2-	7-	35	3,450	cleaning out
General Pet., No. 3 Goleta, Santa Barbara Co.	21-	4-	28	6,912	testing
General Pet., No. 4 Goleta, Santa Barbara Co.	3-	4-	29	mtl.	building rig
General Pet., No. 133 Goleta, Santa Barbara Co.	21-	4-	28	2,030	suspended
General Pet., No. 134 Goleta, Santa Barbara Co.	21-	4-	28	2,053	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21-	4-	28	2,047	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21-	4-	28	2,050	suspended
Bowles Oil Co., No. 140 Goleta, Santa Barbara Co.	21-	4-	28	2,065	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20-	4-	28	2,004	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20-	4-	28	2,012	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20-	4-	28	2,010	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22-	4-	28	2,010	suspended
Bellview Oil Co., No. 159 Goleta, Santa Barbara Co.	24-	4-	29	2,099	suspended
Johnson & Strickland, No. 1-A Goleta, Santa Barbara Co.	19-	4-	27	4,886	suspended
The Texas Co., No. 1 Carpenteria, Santa Barbara Co.	34-	4-	25	440	core hole
Sovereign Oil Co., No. 1 Guadalupe, Santa Barbara Co.	20-	10-	35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14-	5-	27	2,345	suspended
Pacific Finance Co., No. 1 Carpenteria, Santa Barbara Co.	Tideland			2,011	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19-	4-	24	2,080	suspended
Bell, H. H., No. 1 South Mountain, Ventura Co.	22-	3-	21	1,770	rd. sh. drilling
Pure Oil Co., No. 1 S. F. Canyon, Ventura Co.	15-	4-	21	2,591	suspended
Woodruff Oil Co., No. 1 Miguelito, Ventura Co.	4-	3-	24	....	building road
Magu Synd., No. 1 Oxnard, Ventura Co.	17-	1-	21	5,225	abandoned
Graham & Loftus, No. 1 Goose Lake, Kern Co.	20-	27-	22	5,500	sd. sh. drilling
General Pet., No. 1 Buttonwillow, Kern Co.		6-	28-	23	2,615	cleaning out
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.		7-	29-	24	7,000	suspended
Milham Expl. Co., No. 6 Buttonwillow, Kern Co.		8-	28-	23	4,396	redrilling
Purman, T. H., No. 1 McKittrick, Kern Co.	22-	29-	21	2,155	sd. sh. drilling
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	30-	31-	24	5,380	suspended
General Pet., No. 1 Belridge, Kern Co.	30-	28-	21	7,750	br. sh. drilling
Wallace, K. C., No. 1 Belridge, Kern Co.	32-	29-	21	4,222	suspended
Rio Cal Pet., No. 1 Shale, Kern Co.		2-	27-	18	2,355	suspended
Wicker, Sy., No. 1 Arvin, Kern Co.	12-	30-	28	3,850	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-	30-	29	5,910	suspended
Osborn, Colter, No. 1 Weed Patch, Kern Co.	15-	30-	29	3,465	suspended
Osborn, Colter, No. 2 Weed Patch, Kern Co.	15-	30-	29	2,005	suspended
Fullerton Oil Co., No. 1 Semitropic, Kern Co.	25-	27-	23	2,601	abandoned
Fullerton Oil Co., No. 2 Semitropic, Kern Co.	25-	27-	23	780	core hole
Standard, No. 1 Devil's Den, Kern Co.	14-	25-	18	1,600	suspended
Cumberland Oil Co., No. 2 Devil's Den, Kern Co.	17-	26-	18	2,875	suspended
Signal Oil Co., No. 1 Blackwell Corner, Kern Co.	15-	26-	19	106	suspended
United Kern Pet., No. 1 Mojave, Kern Co.	26-	10-	14	1,065	suspended
Meridian Oil Co., No. 1 Mojave, Kern Co.	11-	9-	15	4,000	Diorite
Kendall Dev. Co., No. 1 Mojave, Kern Co.	27-	11-	9	902	hd. sd. drilling
Harding, J. B., No. 1 Mojave, Kern Co.		5-	10-	10	1,030	redrilling
Barnsdall Oil Co., No. 1 Tejon, Kern Co.	15-	11-	20	1,080	sd. sh. drilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-	11-	19	6,025	suspended
Descanso Oil Co., No. 1 Tejon, Kern Co.	31-	11-	19	rig	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-	21-	15	6,197	suspended
Kingsburg Expl. Co., No. 1 Kingsburg, Fresno Co.	30-	16-	23	2,170	sd. sh. drilling
Kent & McDonald, No. 1 Carrizo, San Luis Obispo Co.	3-	32-	22	2,480	br. sh. drilling
Trav-El Oil Co., No. 1 Carrizo, San Luis Obispo Co.	7-	32-	22	2,450	suspended
Indian Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	26-	31-	12	3,380	cleaning out
Martin, J. D., No. 1 Edna, San Luis Obispo Co.	5-	31-	13	2,990	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	34-	27-	11	4,027	resume work
Emerich Oil Co., No. 1 Atascadero, San Luis Obispo Co.	13-	28-	12	1,730	br. sh. drilling
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	1-	29-	12	1,650	suspended
Pacific Inland, well No. 1 Monterey Co.	19-	23-	15	2,200	br. sh. drilling
Brown, W. F., No. 1 Parkfield, Monterey Co.	15-	23-	14	1,051	suspended
Guess, E. B., No. 1 Corcoran, Kings Co.	7-	21-	21	6,197	cleaning out
Byron, N. W., No. 1 Dudley Ridge, Kings Co.	32-	22-	20	rig	rigged up
Irma Investment Co., No. 1 Dudley Ridge, Kings Co.	7-	23-	20	1,345	gas well, idle
Irma Investment Co., No. 2 Dudley Ridge, Kings Co.	7-	23-	20	1,001	cemented
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-	23-	20	1,635	gas well, idle
Eagle Oil Co., No. 1 Dudley Ridge, Kings Co.	15-	23-	20	691	suspended
Kettleman Oil & Gas Co., No. 1-A Dudley Ridge, Kings Co.	20-	23-	20	1,194	gas well, idle
Valley Expl. Co., No. 1 Dudley Ridge, Kings Co.	12-	23-	19	1,302	cemented
Valley Expl. Co., No. 2 Dudley Ridge, Kings Co.	12-	23-	19	1,200	suspended
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-	22-	17	4,600	suspended
Seymour, L. W., No. 1 Avenal, Kings Co.	10-	23-	16	1,148	suspended
Tulare Basin Gas Co., well No. 1, Kings Co.	17-	23-	19	rig	rigged up
Tulaco Oil Co., No. 1 Corcoran, Tulare Co.	30-	22-	23	rig	suspended
Ducor Pet. Co., No. 1 Ducor, Tulare Co.	14-	24-	27	2,200	suspended
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-	17-	24	2,092	suspended
Gravity Expl. Co., No. 1 Alpaugh, Tulare Co.	11-	24-	23	....	location
Ellis & Stanford, No. 1 Tulare Lake, Tulare Co.	20-	24-	23	1,920	testing
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-	12-	17	7,694	suspended
Orinda Pet., well No. 1, Contra Costa Co.	32-	1-	3	2,120	suspended
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-	16-	4	1,040	hd. sh. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3-	2-	10	4,750	suspended
Hilderbrandt, R., No. 1 Crows Landing, Stanislaus Co.	36-	6-	7	1,130	sd. sh. drilling
Orland Oil Synd., No. 1 Orland, Tehama Co.	31-	33-	3	3,040	suspended
San Joaquin Expl. Co., No. 1 Los Banos, Merced Co.	36-	10-	9	....	location
Union Oil Co., No. 1 Tracy, San Joaquin Co.	14-	3-	6	1,107	cemented

Prairie Colorado Test Is Taking Core

Extension of Dry Creek Field, Carbon County, Holds Interest in Montana. Idaho Crystal Dome Test May Be Abandoned

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Jan. 4.—The output of the Hobbs Pool in New Mexico is being reduced by the adoption of the plan for shutting down wells one day each week. The Hobbs proration agreement expires January 10 and probably will be renewed. The Continental Oil Co. had a small completion in the Hobbs Pool and the Midwest Refining Co. is testing its No. 8 Byers. One new location in western Eddy County was reported.

The Prairie Oil & Gas Co.'s No. 1 O'Toole, northwest of the Greasewood Pool, in Colorado, has reached the Muddy and is coring. The Colorado Associated Oil Co.'s test north of Fort Morgan is plugging back and the Indian Territory Illuminating Oil Co.'s well south of Fort Morgan has been abandoned. A test in the Loveland district in Larimer County is to be drilled in the spring. The Ohio Oil Co.'s Craig Dome test in Moffat County is spudding.

S. H. Keoughan and associates have acquired the Midwest, Salt Creek Producers and Mountain Producers interest in the Midway and North Geary operations in Wyoming.

The Carbon Oil & Gas Co.'s well more than a mile east of production on the Dry Creek Dome in Montana looks like it will make the best well in that field.

R. J. Berry and others' test of the Crystal Dome in Idaho probably will be abandoned after encountering the tenth water sand.

NEW MEXICO

Lea County

The major companies operating in the Hobbs Pool have adopted the plan of shutting in producing wells one day each week and this will bring the weekly output down to a daily average of around 31,800 bbls. as against an allowable outlet of 37,183 bbls. daily. Wells producing water on the southwestern edge of the field, of which there is a limited number, will continue on the regular basis to protect the pay horizon, but will make corresponding reductions in the quantity of oil produced. These estimates are based on the proposal that all companies, of which there are 23, agree to the plan.

The proration agreement for the Hobbs Pool between the operators and the State of New Mexico expires by limitation on January 10 and there is some speculation as to the attitude the state officials will take towards the renewal of the agreement. With practical examples of the benefits derived from orderly production of pools before them, it is generally believed the agreement will be renewed for another six months.

The Continental Oil Co.'s No. 5-A State, C NW SE, Section 33-18-38, on the southeastern side of the Hobbs Pool, made 60 bbls. per hour through tubing and 40 bbls. per hour flowing open, with 2,000,000 feet of gas, on a company test. It was drilled to a total depth of 4,184 feet. The same company's No. 6-B State, C SE SW, Section 33-18-38, is building rig.

The Midwest Refining Co.'s No. 8 Byers, C NW NE, Section 4-19-48, was drilled to 4,175 feet and is testing with the tubing at 4,147 feet. It was swabbed eight hours before it began flowing. Same company's No. 11 State, C NW NE, Section 4-19-38, is drilling at 201 feet with the 16-inch cemented at 181 feet.

Eddy County

A new location 25 miles west of Carlsbad in western Eddy County is reported in the New Mexico Oil Syndicate's No. 1 McClelland permit, C NW NE, Section 22-22-23.

Flynn, Welch & Yates' No. 62 State, NW cor. SE, Section 10-19-28, Artesia district, is shut down at 1,000 feet in gypsum and red rock, and tools are being moved to their No. 61 State, SE NE NW, Section 32-18-28, which is preparing to resume at 650 feet.

R. D. Compton's No. 1 Compton, NE NW NE, Section 8-18-27, is shut down for repairs at 400 feet in anhydrite.

Leonard & Levers' No. 6 State, C NW, Section 28-17-29, Maljamar area, is drilling at 1,140 feet in anhydrite.

DeBaca County

Matador Oil Co.'s No. 1 Woods, NE SW SW, Section 6-4n-20, Salada Creek, is drilling at 3,305 feet in quartz sand.

Guadalupe County

New Mexico Producing & Refining Co.'s No. 1 McMillan, SW cor., Section 24-5n-16, Mesa Leon district, cemented 8¼-inch at 3,270 feet for a formation shut-off and is waiting.

San Miguel County

Hirschfield Oil Development Co.'s No. 1 Cabra Springs Ranch, C NE, Section 21-12-22, Pinon Mesa, recemented 12½-inch at 1,370 feet. Total depth is 1,550 feet.

San Juan County

Continental Oil Co.'s No. 17, C NE, Section 2-29-19, Rattlesnake Dome, is bottomed at 6,961 feet with 4,200 feet of water and approximately 700 feet of oil and basic sediment in the hole. It is making between 50,000 and 100,000 feet of gas per day. There has been no change in conditions since deepening started. It is being deepened from 6,790 feet at which depth it was on production for two years. Continental's No. 24, SW NW SW, Section 1-29-19, is bottomed at 6,069 feet and bailing water at 4,100 feet. It has around 700 feet to go to reach the horizon in the Pennsylvanian which was productive in No. 17. Continental's No. 27, NW SE NE, Section 2-29-19, which is being drilled to the shallow pay, is bottomed at 712 feet and waiting for 6¼-inch pipe.

COLORADO

Weld County

The Prairie Oil & Gas Co.'s No. 1 O'Toole, C SE NE, Section 33-7n-62, Crow Creek district, 10 miles to the northwest of the Greasewood Pool, which now holds first place in interest among the operators, is coring in the Muddy sand, but at last reports, no core had been taken from the hole and the possibilities of that sand are not yet known. It topped the first objective at 7,198 feet and yesterday the core barrel was run. It was coming out with a core at last reports, but was delayed on account of a storm. The 9⅝-inch was cemented at 4,516 feet and the hole is open below that point. A string of 7,300 feet of 7-inch is on the racks and whether this will be run at this time depends on the core from the Muddy. If these do not indicate commercial production, it is expected drilling will continue to the Dakota before casing is run. Based on sea level datum, the Prairie well is running approximately 319 feet lower than the wells at Greasewood. Its surface elevation is 4,837 feet and the top of the Muddy was at 2,311 feet below sea level, which compares with 1,992 feet in the Continental Oil Co.'s No. 1 Briggs at Greasewood. The Prairie well cut the Timpas at 6,770-6,803 feet. The three wells to reach the sand at widely separated intervals to the southeast of Greasewood all ran considerably higher.

Continental Oil Co.'s No. 1 Gadbois, C SE SW, Section 24-6n-61, to the southwest of production in the Greasewood Pool, has had some difficulty in drilling by the lost tools and has put in two small shots to loosen up the formation. It is drilling by at 6,554 feet, a few feet below where the whipstock was cemented.

Greeley Oil Co.'s No. 1 Gadbois, C NW NW, Section 25-6n-61, to the southwest of the Continental well, is shut down at a total depth of 6,698 feet with around 6,000 feet of fluid in the hole waiting for new swabbing line. There is some mud and water at the bottom, but this is believed to be drilling water.

Reiter-Foster Oil Co.'s No. 1 Wilson, C NE SE, Section 24-6n-61, is drilling slowly with machine below 400 feet.

Morgan County

Prairie Oil & Gas Co.'s No. 1 Mortier, C NE NW, Section 2-5n-60, 5 miles southeast of Greasewood, is reaming at 6,448 feet to test the Muddy at 5,465-90 feet after plugging back from the Dakota at 6,583 feet and setting whipstock at 6,436 feet. The Muddy showed some saturation on the way down, but no test was made.

Colorado Associated Oil Co.'s No. 1 Pumphrey, C SE SE, Section 14-4n-58, cemented back to 5,785 feet, 5 feet below the base of the Muddy sand, and will shoot off the 8⅝-inch and attempt to test that horizon which showed some saturation in the core. This hole was drilled to 6,176 feet, the last 3 feet being variegated shale, probably in the top of the Morrison formation.

Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, south of Fort Morgan, has been plugged and abandoned. Rig is being torn down. It was drilled to 5,920 feet, finding water in the Lakota sand. It was then cemented back with the intentions of going to the Sundance. Drilling was resumed after taking out a permit to abandon, the understanding being that it would quit as soon as anything happened. The drill stem was twisted off at around 5,855 feet and plugging to abandon began.

Adams County

Hills Dome Oil Lease Development's No. 1 Hills, SE cor., Section 27-3s-64, Watkins district, is preparing to resume at 3,790 feet after being shut down to rig up new equipment and change over from coal to fuel oil. The Siler Drilling Co. has the contract to carry the hole to 6,000 feet with cable tools, if necessary.

Apapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE, Section 7-4s-66, near Aurora, is bottomed at 5,850 feet and is bailing water preliminary to cementing to shut off cavey ground. The 6¼-inch, which had been hanging at 5,632 feet, has been cemented to stop caving from behind the string. It is only a few feet off the top of an unidentified sand which was encountered a number of months ago which had a show of oil, but which could not be tested on account of the cavey ground.

Jefferson County

Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, near Den-

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NEW PRODUCER COMPLETED IN SOUTH TURNER VALLEY DISTRICT

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Jan. 4.—In the South Turner Valley, Sterling Pacific Oil Co.'s No. 2, LSD 10, Section 33-18-2w5, has encountered heavy wet gas production in the deep lime at 5,748 feet. The wet gas flow is estimated at 20,000,000 feet a day. The crude naphtha recovery has not been determined, but may run between 300 and 5 0 bbls. a day. The new producer is south of Sterling Pacific's No. 1 which was in LSD 15, same section, and which last month under restrictions produced 496 bbls. of crude naphtha. It is in the far south end of the Turner Valley, but north of Merland Oil Co.'s No. 1, which is the farthest south producing well in the field.

Sterling Pacific's No. 2 was drilled by Imperial Oil, Ltd., on acreage of the Sterling Pacific Oil Co. The Imperial company also handled No. 1 test which went to an ultimate depth of 6,525 feet and secured only a small production. Sterling Pacific Oil Co. has its office at Vancouver, and was originally largely financed by British Columbia interests. The officers are: President, Blake Wilson; vice president, George S. Harrison; managing director, Austin Taylor; secretary treasurer, W. W. Boultbee; directors, Neil McQueen, F. D. Lundy, Dr. Lyall Hodgins. Section 33-18-2w5 was leased by the Sterling Pacific company from Calgary & Edmonton Corp. and carries one-eighth royalty. The company also holds acreage farther south in Turner Valley and 40 acres in the Jumping Pound district.

The development of big production in this test is an important new development for the far south end of the field and will likely encourage completion of tests now drilling in that area. The log shows that 16-inch casing was set at 200 feet. The drill entered the Home sand at 4,470 feet, repeated in the lower Blairmore, and entered the Fernie shale at 5,130 feet. The 8⅝-inch casing was cemented at 5,200 feet. The drill entered the lime at 5,550 feet and cemented 6⅝-inch casing at 5,600 feet, getting its big production only 148 feet in the lime.

This was the last active test by Imperial Oil, Ltd., in the Turner Valley Field. It is understood that with completion of Sterling Pacific's No. 2, the Imperial company will, for the time being, discontinue active drilling in the field. The company is drilling only one test outside the Turner Valley, this being the Texas-Imperial wildcat on the Lethbridge structure.

Two independent tests have been recently active in the "far south" in the same general area as the new Sterling Pacific producer. Livingston Syndicate's No. 1, N half LSD 5, Section 34-18-2w5, which did some drilling last summer and fall, has been standing for several months at 2,160 feet, at which point casing was cemented. This test is east of Sterling Pacific's No. 2. Mar Jon-Free hold's No. 1, LSD 9, Section 28-18-2w5, is south and a little west of Sterling

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Wyandot County Has Good Producer

Well in Old Lima Field of Northwestern Ohio Makes 2,500,000 Feet of Gas and 200 Bbls. of Oil. Two Good Kentucky Gas Wells

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Jan. 4.—The high spot in the old Lima Field of northwestern Ohio for the closing week of 1931 was the bringing in of an excellent oil and gas well by McPheron, Miller and Cook in their No. 3 on the Bowman-Brillhart farm, Section 21, Tymochtee Township, Wyandot County, which showed an estimated volume of around 2,500,000 feet. It was given a shot, which brought oil, and there being only a 100-bbl. tank available, it filled it in short notice and was reported for better than 200 bbls., making it the best well found in the McCutchinville Field.

The well is in the flats of the Sandusky River. This field is not yet connected to the pipe line, but the new well is expected to have sufficient production to warrant connection to the proposed line to be laid to the field. Gas is being taken from the field by the Ohio Fuel Gas Co., and with the two products being produced in commercial quantities, will bring about more test work in that part of the old Trenton Rock area. The depth of this good well is 1,369 feet, the oil being found in the Trenton lime formation. Reports from the same field are that O'Neal and others have not had much of a showing in a test on the A. T. Spatch farm, Section 6, same township, a a depth of 1,598 feet. Jones & Coyle are drilling on the McLeod Brown farm, Section 21, same township.

South of Lima, Lee Booth's second test on the Walter Richardson farm, Section 7, Mississinewa Township, Darke County, is reported good for 500,000 feet of gas. The Lake Shore & Southwestern Oil & Metal Co. reports a dry hole on the Edward Calkins farm, Section 29, Providence Township, Lucas County, and west of Toledo.

Hancock County

In Hancock County, Portage Township, Mathias Brothers' No. 15 Isaac Hart farm, Section 27, is reported good for only 2 bbls. In the same township, the Ohio Oil Co. abandoned Nos 6, 7 and 11 G. A. Mitchell farm, Section 34. Same company pulled out No. 1 S. A. and George Poe farm, Section 14, Allen Township, also Nos. 5 and 6 S. R. Huntington farm, Section 14. In Liberty Township, the Ohio Oil Co. abandoned No. 14 William Renninger farm, Section 4; No. 9 P. J. Reimund farm, Section 3; Nos. 4 and 15 H. P. Clark, same section; Nos. 9 and 13 J. Cooper, Jr., farm, same section; No. 16 T. Stoker fee farm, Section 2; and Nos. 6, 8 and 13 Mary M. Reed farm, Section 3. L. Cramer's No. 5 Joe Ernst farm, Section 31, Liberty Township, pumped an initial of 20 bbls. H. O. McKay abandoned Nos. 1 and 2 Gibson & Richardson farm, Section 11, same township.

Near Lima in Allen County, the Ohio Oil Co. abandoned No. 5 William Zeitz farm, Section 17, Perry Township. F. J. Sawmiller pulled out old No. 2 on the John Hofman farm, in Ottawa Township. C. C. Apple abandoned No. 1 J. W. Fetter farm, Section 21, Bath Township, and Ira B. Post No. 2 and others abandoned No. 3 N. I. Cool farm, in Jackson Township.

In Wood County, Montgomery Township, Onsel Brothers abandoned Nos. 1, 2 and 3 Bertha I. Phillips farm, Section 30. In Bloom Township, the Ohio Oil Co. abandoned No. 7 Dora Moke farm, Section 30. In Liberty Township, the Ohio Co. abandoned No. 2 Thomas W. Knight; Nos. 11, 13 and 19 Mercer & Carlin farm, and No. 5 H. C. Killian farm, all in Section 12, also Nos. 7 and 13 J. H. Mitchell and No. 7 J. M. Stafford, in Section 2. Same company abandoned No. 8 Oliver C. Mitchell farm, in Plain Township, near Bowling Green.

CENTRAL OHIO

The Central Ohio Field shows 10 completions, 2 being producers with an initial of 43 bbls., 4 dry holes and 4 gas wells, while in new work there were 7 locations reported and 6 wells started spudding, a total of 13 in new work.

Ashland County failed to report any completions, the only change being a well by the Commonwealth Gas Corp. starting up, No. 1 William Shearer farm, Section 11, Montgomery Township.

In Lorain County, McMillan and others have a rig in for No. 1 H. and C. Norton farm, Section 15, Avon Township.

In Coshocton County, Mill Creek Township, the Ohio Gas Light & Coke Co. is drilling No. 4 John Hault farm, Section 9. In Licking County G. H. Long is drilling No. 4 Grandville Ashcraft farm, Section 22, Fallsburg Township, and the Emerald Petroleum Co. is drilling No. 8 James E. Martin farm, Section 9, same township.

In Muskingum County, the Atha Co. has a dry hole on the Homer Beudure farm, Section 19, Washington Township, at a depth of 3,980 feet. Fritz Oil & Gas Co. has a rig in for a second test on the Edward Middleton farm, Section 10, Brush Creek Township. Palmer & Geisinger have a rig on the Bertha E. Drake, Section 3, same township.

In Athens County, the Federal Oil & Gas Co. is drilling on the C. C. Snodgrass, Section 36, Orange Township.

In Stark County the Ohio Fuel Gas Co. brought in a gas well in No. 1-5,584 Victor Boron farm, Section 12, Jackson Township. East Ohio Gas Co. drilled in three nice gas producers, No. 1 Leo Frank farm, Section 14, same township, at 4,428 feet; No. 2 on the T. K. Harris farm, Section 26, same township, at 4,463 feet, and No. 2 John Strouble, Section 23, same township, at 4,420 feet. Brendall and others made a location, on the Emma P. Smith farm, Section 11, Jackson Township.

Ohio Fuel Gas Co. reports a dry hole in No. 1 C. V. Banbury farm, Section 17, Jefferson Township, Knox County, at a depth of 2,929 feet.

In Guernsey County, Commonwealth Oil Corp. drilled in a 40-bbl. initial well in No. 3 on the J. N. Fowler farm, Section 10, Wheeling Township, at a depth of 3,604 feet. W. Keith and others' No. 3 Bertha M. Smith farm, Lot 36, Jackson Township, same county, is rated good for around 3 bbls.

INDIANA

Another oil producer above the average was found by the Gib Van Oil Co. in No. 3 on the Agnes Haskins farm, Section 18, Washington Township, Gibson County, the first 24-hour gauge showing 100 bbls. Big Four Oil & Gas Co. is drilling No. 1 Lottie Hope farm, same section. Wabash Public Service Corp.

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Chestnut Ridge Test Disappointment

Other Pennsylvania Wildcats Still Drilling. Southeast Ohio Has Six Producers and West Virginia Three Completions, Two Oil

By Staff Correspondent

PITTSBURGH, Pa., Jan. 4.—The wildcat test of the Dunn Mar Oil & Gas Co. jointly with the Consumers Fuel Co. on the Anna Grimm farm in Bullskin Township, Fayette County, Pennsylvania, miles from production and on the west flank of the arch of Chestnut Ridge anticline, is now down 3,600 feet and to date is a disappointment. So far the Injun, Speechley, in which it had been hoped there would be a showing of gas, the Warren, the Bradford, and the Kane sands have been drilled through and found dry. The test will be drilled about 400 feet deeper, through the Elk and Black sands, and if nothing is found will be abandoned. It is stated officially that a second test will be started about 2 miles away, the location to be announced later.

In Quemahoning Township, Somerset County, Pennsylvania, the American Natural Gas Co. is continuing to drill its test on the Robert Herwig farm deeper after passing through the formation that proved productive of gas in the tests on the Moore, Miller and Maust farms which lie on a line to the southwest and over a mile distant. The Herwig test is now down about 3,300 feet and will not be drilled much deeper.

The other wildcat drilling east of production is the test on the George S. Davidson farm in Morgan district, Monongalia County, West Virginia, which is being drilled by S. W. Meals and others. It has reached a depth of 2,325 feet without a showing.

During the past week the number of completions was fair with 19 wells finished. Of these, 10 were producers with an initial production of 94 bbls., and 9 were gas wells. There were no dry holes reported.

SOUTHEAST OHIO

After a week with no completions, Southeast Ohio reported 6 producers with an initial production of 67 bbls., mostly produced in the shallow sands of Medina County. In the northeast quarter of Harrisville Township, and on Lot 6, F. Barnhard and others completed No. 3 on the J. W. Funk farm at a depth of 396 feet. After shot it produced 20 bbls. the first day. In Chatham Township, Lot 20, Section 16, E. R. Edson & Son Co. completed No. 31 on the Morris A. and Eva Franks farm at 495 feet. It made 25 bbls. the first day after shot. In Section 13 of the same township, and Lot 3, the Oko Oil & Gas Co. completed No. 52 on the Henry Essig lease at a depth of 375 feet. It is showing for a 2-bbl. pumper after shot. In the same township, and Lot 18, Section 16, the Preston Oil Co. drilled No. 5 on the Charlie Gunsard farm in the Cow Run at 425 feet. It produced 8 bbls. the first day after shot.

In the NW Section 17, Island Creek Township, Jefferson County, the Mount Tabor Oil Co. completed its No. 20 and on the James A. Blackburn farm. It was drilled in the Berea sand at 1,250 feet and is showing for a 2-bbl. pumper after shot. It is located about 600 feet north of the test on that farm. In Section 23, Fallsbury Township, Licking County, the scene of many very fair producers, George H. Long and others completed a test on the Granville Ashcraft farm at 2,909 feet and in the Clinton sand. The well produced about 20 bbls. the first 48 hours after shot.

In Perry County E. W. English and others are drilling on the Hugh McTague heirs farm in Section 12, Bearfield Township, which has reached 2,700 feet. In Section 11, Reading Township, the Mid-East Gas Co. and others have a test on the Homer Caywood farm drilling at 3,000 feet. In Section 25, Coal Township, the Kachelmacher Estate has a rig standing for a sixth well on the Hemlock Coal Co. tract.

In Brush Creek Township, Muskingum Township, the Pure Oil Co. is drilling No. 6 on the C. S. Stutes farm, Section 3. It has reached 2,100 feet. In Washington Township the Mehowa Oil & Gas Co. has completed a rig on the J. A. Williams farm, Section 11. In Licking County, the Wehrle Co. has a test drilling on the Flint Ridge Coal Co. tract in Lot 3, Hopewell Township. It is drilling at 2,200 feet.

In Guernsey County, George Jewell and others have a test drilling on the H. Marshall farm in Section 3, Cambridge Township. It has reached 1,8'0 feet. In Tuscarawas County, the Gordon Oil Co. and others have a rig standing for No. 4 on the Ralph Huffman farm, Lot 35, Washington Township. In Hocking County, the Preston Oil Co. has its No. 3 on the C. K. McCarty farm, Section 2, Washington Township, drilling at 2,700 feet. In Section 30, Green Township, the Griffin Producing Co. has a rig standing for a second test on the Clara J. Park farm.

In Noble County, Metcalf and Robinson have started drilling a second test on the Fred Springer farm in Section 28, Elk Township. In Enoch Township, the Harper Brothers are drilling on the D. Morland farm in Section 31, Enoch Township, but are at present shut down with the tools in the hole. In Jackson Township, the Warren Brothers and others have rigged up on the Mitchell farm.

WEST VIRGINIA

There were 3 producers completed in West Virginia, the largest being in Waggoner district, Mason County, where the Berea Oil & Gas Corp. completed a test on the Jackson Coal & Mining Co. tract in the second Cow Run sand showing for a 10-bbl. producer.

In Doddridge County, Riley Yeater completed a test on the Nova McKinney farm in Grant district at 2,077 feet, the Big Injun sand. The Big Injun was struck at 1,975 feet and at 1,980-85 feet there was a showing of gas, as also at 2,055 feet. At 2,063 feet, there was a showing of oil and gas. The test is estimated good for about 5 bbls. a day. In Clay district, Wirt County, Biddle and Backus completed a test on the Monroe Lewis farm which is showing for a 2-bbl. pumper.

Gas Wells

Boone County was active with three

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Natural Gas Industry Developments

LACK OF JURISDICTION IN FORT WORTH CASE

FORT WORTH, Tex., Jan. 4.—An injunction sought by the Lone Star Gas Co. to restrain the city of Fort Worth from filing a law suit in the County Court seeking to condemn the local distributing property of the gas company, was denied by District Judge Frank P. Culver, Jr., who ruled his court lacked jurisdiction to act on the application.

The petition for the injunction was filed in Seventeenth District Court by the Lone Star Gas Co. on July 22, the day after a contract for a supply of municipal gas was signed between city officials and the Shamrock Natural Gas Co. Authority was given city officials to seek a new supply of gas to be distributed by the municipality by a majority of taxpayers voting on this question.

An amended petition probably will be filed soon by the gas company in the same court, gas company attorneys indicated.

Karl Griffith, Dallas, vice president and general counsel for the Lone Star Gas Co., led for the utility. He was aided by Roy Coffee, Dallas; George Thompson, Jr., J. H. Barwise and O. K. Shannon, Jr., of Fort Worth.

ANACONDA COPPER CO. IS CHANGING TO GAS

The combination of a new outlet for vast quantities of natural gas produced by the Montana Power Co. controlled by the American Power & Light Co. and a reduction in the fuel costs of the Anaconda Copper Mining Co. is revealed in the plan of the latter corporation to change from the use of coal to gas for the operations of its Anaconda and Butte smelters. Fuel requirements of the mines operated in that area by the copper company are also to be supplied.

The immensity of the copper producer's needs is indicated in reports that at peak production a total of 24,000,000 feet of natural gas is expected to be required every 24 hours. Transmission of the gas from the Cut-Bank Field to Anaconda will be effected through a new 223-mile pipe line. Natural gas will be delivered by the utility company at the Washoe reduction plant, the acid plant and foundry departments in Anaconda, Mont., and to three places near the boiler plants in Butte.

Some of the equipment furnished by the engineers include a 100,000-gallon fuel tank for an oil reservoir where such fueling is needed instead of coal. This is also an alternative and a safety measure against gas line failure. Pipes, fittings and meters have been provided for 125-pound pressure.

JAPAN PRODUCING MORE GAS

Japanese Petroleum Co. is planning to increase the capacity of its casinghead plant in the Kinsui Field in Taiwan for the production of 40,000 gallons per day, in place of the 25,000 gallons daily which the plant has been yielding. All of the production of the plant is being shipped into Japan proper.

In addition to increasing natural gasoline output, the company is erecting a carbon black plant in the field and expects to produce 3,600 pounds daily from 3,000,000 cubic feet of natural gas. This production will be equivalent to about 25 per cent of Japan's annual imports.

BETTER GAS BUSINESS SEEN BY GALLAGHER

"Business cannot help but improve during 1932," declared R. W. Gallagher, president of the American Gas Association. Continuing, he said: "There is apparent, and has been for some time, a growing demand for necessary replacements, both of household equipment and otherwise, and this demand, together with the increasing development of central housheating, air conditioning, gas refrigeration and other modern uses of gas, is, I think, slowly crystallizing into action."

Owing largely to activity in the construction of new pipe lines and the extension of distribution systems for natural gas which characterized most of 1931, the decline in natural gas sales for domestic and commercial purposes was relatively small, amounting to less than 2 per cent. In keeping with general economic conditions however, natural gas sales for industrial purposes registered a decline of about 15 per cent. In addition to this decline in ordinary industrial sales, the amount of natural gas used for nonutility purposes including the manufacture of carbon black and consumed in oil and gas field operations apparently declined some 28 per cent, with the result that the entire consumption of natural gas for all purposes during 1931 is expected to run about 20 per cent under the corresponding figure for 1930.

"More than $300,000,000 was invested during 1931 in the construction of long-distance pipe lines," said Alexander Forward, managing director of the American Gas Association, "and this expenditure, mostly for pipe, averted a much greater loss in the iron and steel industries."

GAS MIXTURES, THEIR SELECTION, UTILIZATION AND DISTRIBUTION

By J. A. Perry
United Gas Improvement Co., Philadelphia

Blending gases to meet our requirements is today an important problem. A correct solution for each particular situation is a measure of our abilities to accept and to use those materials which will give the most economical as well as the most satisfactory service to our customers.

The available materials include coal, coke, oil, natural and other hydrocarbon gases. Coal gas, carburetted water gas and natural gas have all been used but in the past the locality of production and the limits imposed by transportation facilities confined the use of certain materials to a more or less definite area. Developments in transportation facilities and refinements in and growth of the petroleum industry have greatly modified conditions.

Improvements in pipe lines and pumping equipment and the development of large reserves have multiplied the economical distance for the transportation of natural gas. The search and continued drilling for oil has greatly increased the immediate and future quantity of natural gas available. These developments free natural gas for use in many new locations.

The ever growing demand for gasoline both in total quantity and in relation to other petroleum products as well as the increased production of crude oil has made new oils available to the gas industry and has modified and greatly cheapened the oils formerly used for gas making. Refinements in the petroleum industry have made the hydrocarbon gases, propane and butane, as well as refinery oil gas, available for many situations.

The large use of coke for domestic and industrial purposes has made it economical to produce and to use large quantities of coke oven gas.

If the entire supply is to be made of any one particular gas the problem is simply one of selection. Usually, however, two or more gases should be used and it is necessary to blend them in such a way that satisfactory appliance performance may be anticipated under any and all load conditions.

Three Factors

The work done at the American Gas Association laboratory for the mixed gas research committee has shown that there are three factors which govern the variations permitted if the gas utilization appliances are to perform in a satisfactory manner. Quoting from various reports these factors and their influence are:

(a) Heating value.
(b) Specific gravity.
(c) Chemical composition.

A change in heating value per cubic

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TABLE NO. 1—GASES COMMONLY AVAILABLE

Component gases—	CO	H_2	CH_4	C_2H_6	Ills.	CO_2	O_2	N_2	Blue gases	Hydrocarbons	Inerts	B.t.u.	Spec. grav.
1. Producer gas	25 3	13.2	0.4	...	...	5.4	0.5	55.2	38.5	0.4	61.1	129	.878
2. Blue gas	38.3	52 8	0.4	...	...	5 5	0.1	2 9	91.1	0.4	8 5	295	.521
3. 250 B.t.u. blue gas	34 8	42.0	0.4	...	...	5.5	0.2	17.1	76.8	0.4	22.8	250	.618
4. Coal gas	5 9	55 2	29.6	...	2 7	1.4	0.7	6.5	59.1	32.3	8.6	548	.375
5. Coal gas-producer gas	7.3	51 3	26.6	...	3.2	2 1	0.9	8 6	58 6	29.8	11 6	527	.431
6. Carburetted water gas no blow run	32 6	38.2	3.0	2.2	8.6	3.4	0.5	6 5	70 8	16.8	10 4	530	.643
7. Carburetted water gas with blow run	24.1	32.5	9 0	2 2	10 3	4 6	0 6	16.7	56 6	21 5	21 9	530	.703
8. Carburetted water gas low gravity	21 9	43 6	10.9	2.5	6.1	3 6	0 4	5.0	71.5	19.5	9.0	536	539
9. Carburetted water gas no blow run	25.7	32 6	8 6	7.2	13.1	6.1	0 6	6.1	58 3	28.9	12 8	603	675
10. Reformed gas refinery	14.3	50 9	15 3	5.0	2.4	2 2	0 9	8 4	65.2	23.3	11.5	530	.497
11. Reformed gas natural	14.5	43 5	29.7	1 7	1 0	2 4	0.2	7 0	58 0	32.4	9 6	530	.472
12. Refinery gas high paraffin	1 2	6 1	4.4	72.5	15.0	...	0 2	0.6	7.3	91.9	0 8	1,644	.990
13. Refinery gas high olefin	1.2	13.1	23.3	21.3	39.6	0.1	1 0	...	14.3	84 6	1.1	1,468	.890
14. Natural gas	...	...	78.8	14 0	...	0.4	...	6 8	...	93.8	7.2	1,012	.635
15. Natural gas	...	...	82.8	16.2	0.8	0.1	...	...	...	99.9	0.1	1,145	.650
16. Butane—commercial	...	...	...	...	...	...	...	...	...	100.0	...	3,200	1.950
17. Propane—commercial	...	...	...	...	...	...	...	...	...	100.0	...	2,550	1.523

TABLE NO 2—PROBLEM "D"—BASE AND PEAK GASES, 700 B.t.u. STANDARD

Component gases—	CO	H_2	CH_4	C_2H_6	Ills.	CO_2	O_2	N_2	Blue gases	Hydrocarbons	Inerts	B.t.u.	Spec. grav.
Mixture of base gases—													
1. Coal gas and natural gas	4.0	35.8	45.7	4.6	1 8	1.1	0 4	6.6	39.8	52.1	8.1	700	.460
2. Coal gas and refinery oil gas	5.2	46.7	36.1	10.1	4.4	1.2	0.6	5.7	51.9	40.6	7.5	700	.460
Selected mixtures for base load—													
3. Coal gas, producer gas and natural gas	6.1	22.7	47.9	6.5	1.1	1.5	0.3	13.9	28.8	55.5	15.7	700	.570
4. Coal gas, 250 B.t.u. blue gas and natural gas	8 3	28.0	46.1	6.1	1.1	1.7	0.3	8.4	36.3	53.3	10.4	700	.530
5. Coal gas, producer gas and refinery oil gas	7.9	38.0	20.3	14 2	4.7	1.7	0.6	12.6	45.9	39.2	14.9	700	.570
Peak gases—													
6. Coal gas, natural gas and carb. water gas	17.2	27.1	36 0	6 0	4 7	2 1	0 3	6.6	44.3	46.7	9.0	700	.600
7. Coal gas, refinery oil gas and carb. water gas	25.2	34.9	9.6	13.6	9.0	2.7	0.5	5.6	60.1	31.1	8.8	700	.668

OSWEGO, KANS., VOTES FOR MUNICIPAL PLANT

OSWEGO, Kans., Jan. 4.—Oswego has voted $32,000 bonds to build a municipal gas plant after months of negotiations with the American Gas Co. in an effort to eliminate a 75-cent monthly service charge and obtain a reduction in the 65 cent a thousand rate.

The gas company eliminated the 75-cent service charge, substituting a $1 minimum on a 65-cent rate for the first thousand feet. This would have made the first 2,000 feet cost $1.30.

This is the second town served by this company to vote bonds for a municipal plant. Altamont, 12 miles west, voted them in October and has signed a contract with the Veeder Gas Co. to supply gas at 25 cents a thousand. Officials estimated that in buying the gas for 25 cents the city could retail it for 50 cents and retire the bonds without any tax levy. The vote was 523 for, 54 against.

The general office of the American Gas Co. is at Bartlesville, Okla. Its president and general manager is C. E. Burlingame.

GAS UTILITY REVENUES DECLINE DURING YEAR

Revenues of utility concerns engaged in the distribution of manufactured and natural gas aggregate $537,306,395 during the first 10 months of 1931, according to reports from companies serving some 13,656,740 customers and comprising approximately 90 per cent of the utility distribution of manufactured and natural gas.

The manufactured gas companies reported revenues of $314,191,940 for the 10 months, a decrease of 2.3 per cent from the $321,654,799 for the corresponding period of 1930. The revenues of the natural gas utilities totaled $223,114,455, a drop of 6.9 per cent from the same interval of 1930.

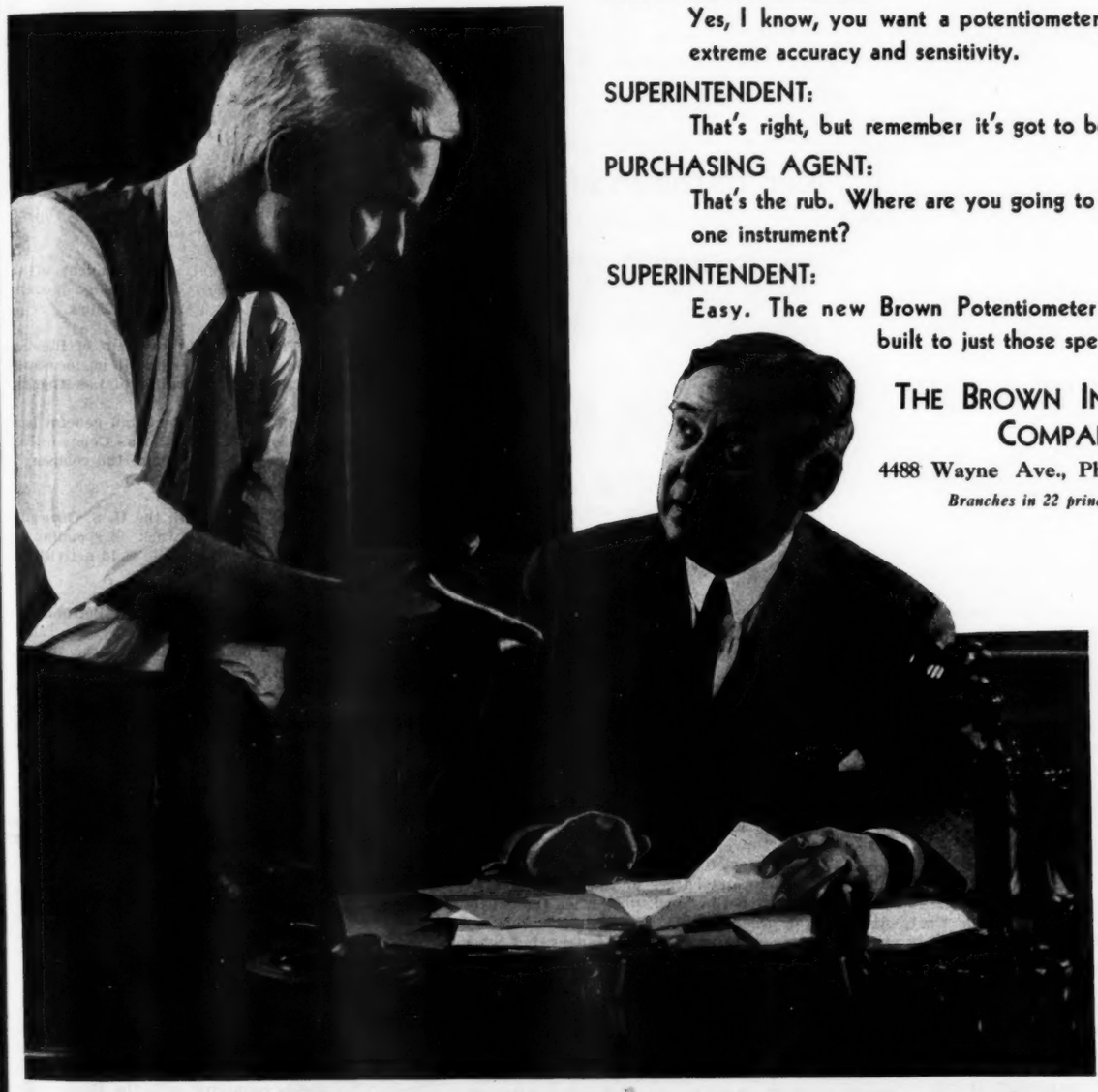
For the 10 months ending sales of the manufactured gas companies aggregated 292,992,851,000 feet, representing a decline of 2.3 per cent from 1930. Sales of natural gas reported for the same 10-month interval totaled 549,985,192,000 feet, compared with 605,192,164,000 feet, a loss of 9 per cent.

SUSPENDS LAREDO REDUCTION

AUSTIN, Tex., Jan. 4.—The Texas Railroad Commission, by order of its gas utilities division, has suspended the ordinance of the city of Laredo, Tex., reducing the rate charged by the Border Gas Co. for natural gas. The suspension was on appeal of the gas company, pending a hearing to determine reasonableness of the ordinance rate. The gas company filed bond of $20,000 to indemnify users if the lower rate is approved.

"OUR WORK HINGES ON HEAT

We Need a Better Means of Measuring Those Critical Temperatures"



PURCHASING AGENT:

Yes, I know, you want a potentiometer pyrometer of extreme accuracy and sensitivity.

SUPERINTENDENT:

That's right, but remember it's got to be rugged, too.

PURCHASING AGENT:

That's the rub. Where are you going to get all that in one instrument?

SUPERINTENDENT:

Easy. The new Brown Potentiometer Pyrometer is built to just those specifications.

THE BROWN INSTRUMENT COMPANY

4488 Wayne Ave., Philadelphia, Pa.

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50 FEATURES

of the new Brown Potentiometer Pyrometer are described in the Brown catalog 1101. Write for copy.

To Measure is to Economize

BROWN POTENTIOMETER PYROMETER

Brings Laboratory Accuracy to Industry

Personal Paragraphs About Oil Men

Alan E. W. Chorlton, C.B.E., M.P., M.Inst.C.E., has been appointed a director of Trinidad Leaseholds, Ltd.

• • •

A. Beeby Thompson has returned to London from a several weeks' tour of inspection in the oil fields of Rumania.

• • •

R. L. Meyer, assistant chief engineer for the Standard Oil Company of Indiana, visited Casper, Wyo., on his annual inspection trip.

• • •

E. T. Vincent, assistant petroleum engineer at Billings, Mont., with the U. S. Geological Survey, was in Casper, Wyo., a few days on business.

• • •

Frank S. Gray, head of the leasing branch of the land department of the Prairie Oil & Gas Company, was given a 25-year service medal last week.

• • •

P. E. Mehaffey, president; W. H. Gorey, vice president; and D. O. Larkin, sales engineer, all of the Happy Belting Company, have been in St. Louis to visit the plant of the Medart Company.

• • •

Carroll H. Wegemann, formerly chief geologist of the Midwest Refining Company and Pan-American Petroleum & Transport Company, New York City, is giving a brief course of lectures at Princeton University.

• • •

S. E. Murphy, of the refining and marketing department of the Cities Service Company, has been visiting Mid-Continent refining points for the past two weeks and has returned to his office in New York City.

• • •

J. E. Rouse, superintendent of the Rocky Mountain division of the Standard Oil Company of Indiana, Mrs. Rouse and their son have returned to their home in Casper, Wyo., after a short visit in Denver.

• • •

J. H. Brown, Tide Water Oil Company, New York, has been appointed a member of the American Petroleum Institute's committee on accident prevention in refineries. He succeeds S. W. Candee of the same company, resigned.

• • •

James C. Templeton, managing director of the International Geophysical Prospecting Company, Ltd., is on a visit to northwest Germany. The survey there is under the direction of Dr. S. Papp, chief geologist to the company.

• • •

S. W. Coons, chairman of the Standard Oil Company of Kentucky, has resigned, but remains a director. The position will not be filled, W. E. Smith, president, announced. The retirement of Mr. Coons was after 50 years of service with the company.

• • •

W. P. Gallagher, chief geologist, Union Oil Company of Nevada, subsidiary of the Union Oil Company of California, has been staying at Beeville, Tex., and C. H. Sherman, vice president and general manager, is temporarily in San Antonio, Tex.

• • •

C. E. Dobbin, U. S. Geological Survey, has been elected president of the Rocky Mountain Association of Petroleum Geologists. Other officers chosen were: Vice president, A. E. Brainerd, Continental Oil Company; vice president, H. F. Davis, California Company; secretary-treasurer, G. G. Law, U. S. Geological Survey.

• • •

A. L. Stover, prominent oil producer in the Bradford Field, gave his seventh annual newsboys' dinner in Bradford, Pa., on New Year's day. It was attended by 175 Bradford newsboys and carriers. When Mr. Stover was a lad he sold the Duke Center Gimlet, a famous old oil country newspaper, his route lying up Oil Valley and Tram Hollow where the snow in winter lay deep, and the mud in fall and spring lay deeper, and he has always been a friend of the newsboy ever since.

D. H. Rowland, Star Manufacturing Company, Oklahoma City, Okla., was in Tulsa on business.

• • •

F. A. Kirkland, purchasing agent of the Kewanee Oil & Gas Company, is on a business trip to Pampa, Tex.

• • •

Mark W. Potter has been elected director of Simms Petroleum Company, succeeding Arundel Cotter, resigned.

• • •

Hoke Martin, technical representative for the Matheison Alkali Works with offices in Chicago, is spending several days at the company's office in Tulsa.

• • •

D. F. Wilson, of Parkersburg, W. Va., was in Casper, Wyo., preparing for the drilling of a well in the Osage Field, eastern Wyoming. Mr. Wilson and associates have organized the Tug Oil Company.

Men of the Industry

Joseph V. Blake

Joseph V. Blake was born in New York in 1896, but spent most of his early years in Hackensack, N. J., where he received his early schooling, later attending the University of Pennsylvania, Philadelphia. He has completed eight years service operating the steamers and barges of the Pure Oil Company, having started in April, 1923, when the marine division was organized. At that time the Pure Oil Company was operating only one tanker, but when the production and refining facilities were enlarged tankers were added. Mr. Blake also acts as agent for the Sabine Towing Company's equipment at the ports of New York and Philadelphia, which transports products from Marcus Hook to New York and to the various metropolitan bulk stations.

Mr. Blake's experience in the operation of tankers began in 1919, when he was connected with the tank steamer department of the U. S. Shipping Board, at that time operating 87 steamers to all parts of the world. At the outbreak of the World War he enlisted in the Seventh Regiment. This later became the 107th U. S. Infantry of the Twenty-seventh Division and it participated in four major battles on the Belgian and French fronts.

Mr. Blake, with his wife and one son, resides in Larchmont, N. Y. He is a member of the Propeller Club, the Philadelphia Maritime Exchange and other marine associations. His chief interest is in the launching and trial trips of new tankers and barges, especially motorships propelled with Diesel engines.

Sidney H. Kecughan of Denver, Colo., visited Casper, Wyo., last week on a business mission.

• • •

L. A. Marquiss, sales representative of the Atlas Powder Company, Joplin, Mo., called on the trade in Tulsa recently.

• • •

Harry H. Power, petroleum engineer, Gypsy Oil Company, Tulsa, was in Dallas, Tex., last week on company business.

• • •

Lawrence Hagy, geologist and oil operator of Amarillo, Tex., and Mrs. Hagy are home from a wedding trip through Europe.

• • •

G. A. Harmon, drilling superintendent for the United British Oilfields of Trinidad, Ltd., has recently been on a visit to California.

• • •

C. B. Le Flore, drilling superintendent for the Iraq Petroleum Company, Ltd., is in California studying modern development methods.

• • •

Dana Hogan is retiring from the Doheny oil organizations after 19 years' service and intends spending an indefinite time in Europe.

• • •

R. D. McClaren, general superintendent of the Ohio refineries for the Pure Oil Company, is spending the holidays with his parents in Tulsa.

• • •

Clarence M. Fuller, former president of Richland Oil Company, has re-entered the oil business with the Emblem Petroleum Corporation of Los Angeles.

• • •

R. Van A. Mills, vice president and general manager of the Hudson's Bay Oil & Gas Company, has been at Keho Lake, Alberta, where the company is drilling tests.

• • •

G. A. Waring, geologist, with the U. S. Geological Survey in Alaska on special work, is spending the winter at his home in Tulsa while field activities in Alaska are shut down.

• • •

William Braybrook has arrived in Petrolia, Ontario, on a three months' furlough from Talara, Peru, where he has been working for the International Petroleum Company.

• • •

M. H. Shanahan, production superintendent in North and Central Texas for the Continental Oil Company, has returned to Wichita Falls from a trip into Colorado and Wyoming.

• • •

Frank Carr, vice president of the Leland Equipment Company, visited his family in Tulsa for a few days during the holidays. He has returned to Willow Springs, Tex., where he is located at the company's warehouse and store.

• • •

W. S. Nix of the Shell Oil Company, Wilmington, Calif., has been appointed a member of the American Petroleum Institute's committee on disposal of refinery wastes, succeeding G. H. vanSenden of the same company, resigned.

• • •

Wallace Leavitt of Great Falls, Mont., spent the holidays in Casper, Wyo. Mr. Leavitt was superintendent of the Home Oil & Refining Company at Great Falls and is connected with the Pondera Refining Company in an advisory capacity.

• • •

Capt. M. Stuckey, general superintendent in charge of the projected construction of the Iraq pipe line, together with P. G. Douglas (Anglo-Persian), have returned to London after their recent tour over the route which the pipe line will take.

• • •

Roy H. Hall, with the Gypsy Oil Company, read a paper entitled "A Review of the Oil and Gas Resources of Kansas" at the January 5 meeting of the Kansas Geological Society. Dr. George C. Branner, state geologist of Arkansas, will be the speaker at the next regular meeting February 2.

Announcing Rex Roller Chains—

AN IMPORTANT ADDITION TO THE REX LINE. AN IMPORTANT NEW SOURCE FOR USERS OF HIGH SPEED AND SHORT CENTER DRIVES

Chain Belt Company announces for delivery commencing January 1, a complete line of high-speed, high-finish roller chains and sprockets—block chain and leaf chain.

The addition of these lines to the long established line of Chain Belt Company offers the user a new complete line source for virtually all chain requirements.

Standards Maintained

Rex Roller Chain and Sprockets are offered in all standard sizes from ⅜ inch to 2½ inches. All chains and sprockets are built to the A. S. M. E., S. A. E., and A. G. M. A. standards.

All are built to the same high standard of design and the same high degree of excellence of manufacture that distinguish the outstanding Rex Chains—Chabelco—Durobar—Unicast—Griplock—and the many other types of Rex chain now on the market.

Their Qualities

Specially selected steels, accurately cut and machined, carefully case-hardened, are assembled by most modern machinery into a roller chain of outstanding qualities, high tensile strength and a high degree of finish and uniformity, handsome in appearance and completely interchangeable with other standard makes.

The Chain Belt Company enters this new field confident that the maintenance of the same standards that have characterized the growth of this company over 40 years will open a wide new field for the company in the realm of high speed and short center drives.

Chain Engineering

Rex Roller Chain is backed by a Chain Engineering Force, long skilled in the application of chain drives, with a complete line of malleable, steel and roller chain at their disposal.

Shipment from Stock

Immediate shipment of chains and sprockets, all standard sizes, can be made from stocks maintained in Eastern, Central and Western United States.

A Catalog is Ready

If you are unacquainted with Rex Chains, or are interested in this important new line of Rex Roller Chains, may we suggest that a line to the Chain Belt Company will bring you the complete new catalog of Rex Roller Chains containing in more than a hundred pages complete description of the chains and valuable data as to their possibilities and uses.

CHAIN BELT COMPANY, 1619 WEST BRUCE STREET, MILWAUKEE, WIS.

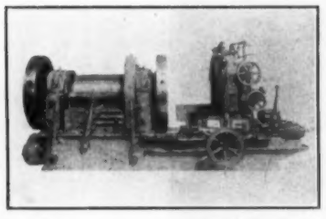
REX ROLLER CHAIN

Established 1891—Branch Offices in 17 Cities

Oil Industry Equipment and Supplies

ANNOUNCES MACHINE FOR THREADING AND CUTTING

The Landis Machine Co., Inc., Waynesboro, Pa., has added another pipe threading and cutting machine with receding chaser die head and leadscrew to its line of pipe machines. This 13⅜-inch ma-



chine has a capacity of 4½ to 13⅜ inches O.D. It will generate a tapered pipe thread of any length up to and including 8 inches and any tapers of three-quarters inch per foot and less on all pipe, casing and tubing sizes within its range.

The receding chaser feature reduces the cutting strain on the chasers to that required for a straight thread of like diameter and pitch and it insures accuracy and an exceptional finish. It permits the use of a narrow chaser which lowers the initial chaser cost, adds materially to the life of the chasers between grindings and otherwise effects savings.

The die head has a universal adjustment for size. In addition there is a micrometer adjustment for the final setting. Each graduation on the micrometer dial gives a variation of .001 inch in diameter. The die head is a two-cut head and can be used for roughing and finishing. The roughing and finishing cuts are controlled by the same receding mechanism. The finishing cut can be made without any change in the diametrical adjustment.

The chaser holders of the die head cover a range from 8⅛ to 13⅜ inches, but chaser-holder extensions, having a range from 4½ to 8⅝ inches, can be fitted to the chaser holders so as to give the die head a total range of 4½ to 13⅜ inches inclusive. The chaser holders are adjustable to and from the center to insure an equal distribution of the cut.

A chaser, 1$\frac{13}{16}$ inches in width, is employed for all thread lengths. The chaser-holder chasers have an initial length of 4 inches, but they may be used in the chaser-holder extensions after they have been ground to a 3-inch length or less. The same chasers can be used for any pipe size within the ranges of the chaser-holders or chaser-holder extensions, as long as the pitch, taper and thread form are constant. The chasers of the 13⅜-inch pipe threading and cutting machine with receding chaser die head will interchange with those of the 8⅝-inch machine announced in September, 1930.

The taper mechanism, of an exclusive design, generates a straight line taper or a taper which is absolutely uniform throughout the entire thread length. The sine bar is easily and quickly adjusted for all tapers. A tapered plug provides a positive means for locating the sine bar for the three-sixteenths, three-eighths and three-quarter inch tapers. The adjustment for thread length is a simple operation. Once set, the adjustment is made permanent by a locking screw.

The sine bar retarding bracket, which actuates the taper mechanism, is adjustable for the length of pipe extending beyond the face of the chuck. It is set to have contact with the sine bar at the start of the thread. An automatic safety device releases the sine bar retarding bracket should the operator neglect to open the die head at the finish of the thread.

The leadscrew is located centrally between the guides of the machine and takes the load without binding the carriage. It has a coarse pitch thread with a round crest to facilitate the engagement of the nut. The leadscrew nut is of the split (full-nut) type and is made of bronze. The two segments are mounted in a steel carrier. They have contact with and take the thrust load directly from the carriage. The engagement surface of the leadscrew nut is lubricated automatically from a reservoir in the carriage.

NOTES ABOUT TRADE LITERATURE

"Facts Touching on Fractionating and Absorption Problems" is the title of an eight-page bulletin issued by the Leader Iron Works, Inc., Decatur, Ill.

A 16-page booklet, "Lunkenheimer Oil Cups and Oiling Devices," has been prepared for distribution by the Lunkenheimer Co., Cincinnati, Ohio.

The Metallizing Co. of Los Angeles, Ltd., Los Angeles, Calif., is mailing a bulletin describing and illustrating its metallizing gun and the process of applying a metallic surface to various substances.

An article on "Improvements in River Crossings" in the December number of Oxy-Acetylene Tips, published by the Linde Air Products Co., New York, tells of the strength and permanence of pipe line river crossings where oxwelded joints are used.

The 1932 catalog of the American District Steam Co., North Tonawanda, N. Y., covers the Adsco line of steam line equipment.

The Oil Industry Mailing List Co., Tulsa, has issued a circular explaining its new mailing lists for 1932, including producers, purchasing agents, refiners, natural gasoline manufacturers, oil and natural gas pipe line companies, drilling contractors, oil well supply companies and jobbers and retailers of refined products.

The Link-Belt Co., Indianapolis, Ind., is distributing a book devoted to Promal castings.

The first issue of The Motorizer has been issued by the Lincoln Electric Co., Cleveland, Ohio. This interesting publication, the company explains, has been started in response to requests from engineers, purchasing agents, electricians, maintenance and others for some "source of reference for practical up-to-the-minute information on motors and controls."

"Something New in Aluminum Paint" is the title of a folder, in colors, distributed by Aluminum Industries, Inc., Cincinnati, Ohio.

Bulletin No. 192, issued by Bailey Meter Co., Cleveland, Ohio, describes Bailey gravity recorders for liquids, illustrating how they continuously record the specific gravity of a liquid and automatically correct its record for variations in the temperature of the liquid.

SAUNDERS VALVE TO BE MADE BY HILLS-McCANNA

The Hills-McCanna Co., 2349 Nelson St., Chicago, has acquired manufacturing and sales rights on a valve designed and perfected by P. K. Saunders, a mining engineer in South Africa. The valve originally was intended to eliminate costly leaks in water and air lines. The valve perfected has no metal-to-metal seats, no stem packing or stuffing boxes, and is designed for general service.

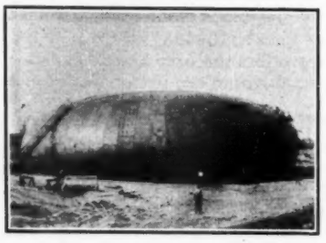
The materials handled never reach the valve bonnet. The diaphragm protects all the working parts from the substances handled. This is pointed out as important in handling volatile liquids, gases and air, liquids having gritty solids in suspension and corrosive liquids. Access to the bonnet or body does not require removal from the line. The design requires only the body to be cast in special metals.

In the closed position the diaphragm is compressed between the compressor follower and the seat. An even distribution of pressure on the diaphragm is achieved through proper design and machining of the seat and compressor.

H. O. Swoboda, Inc., Pittsburgh, Pa., is sending out a bulletin describing the Falcon straight-line continuous electric furnaces arranged for hardening and tempering strip steel.

LARGEST SPHEROID TANK IN WORLD IS COMPLETED

The accompanying picture shows the largest Horton Spheroid tank ever constructed. It is a welded tank erected by



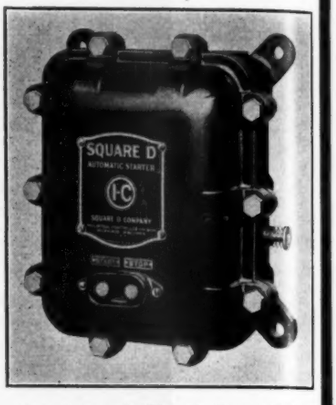
the Chicago Bridge & Iron Works at the East Texas Refining Co.'s plant in Longview, Tex. A second 80,000-spheroid tank is under construction by the company. One will be used for storage of crude oil and one will be used for gasoline. These tanks were designed to withstand 1 pound gas pressure in addition to the liquid load.

MOTORIZED SPEED REDUCER

A speed reducer of the planetary type built integrally with an electric motor, forming a single, neat and compact unit, has been placed on the market by Gears and Forgings, Inc., Cleveland, Ohio. This self-powered and self-contained type of speed reducer is designed particularly for applications where space for the driving mechanism is limited. The housing of the reduction gears is dust-proof and oil-tight. It is integral with the base, which extends to the center line of the motor and provides rigid support to the gearing and output shaft which carries the load. No additional loads are imposed on the motor shaft which is supported by two ball bearings. This motorized speed reducer is built in 34 standard ratios ranging from 4:1 to 240:1, inclusive, and in sizes from one-quarter to 30 horsepower.

STARTER IS ANNOUNCED FOR HAZARDOUS PLACES

Class 8,532, Types AR-1 and BR-1 explosion proof starters, manufactured by the industrial controller division of the Square D Co., Milwaukee, Wis., have been approved by the Underwriters' Lab-



oratory for use in Class 1, Group D, locations which include such hazardous atmospheres as are encountered in oil refineries; gasoline plants; paint, varnish and lacquer plants.

Type AR-1 has a "start-stop" push button in the cover while Type BR-1 is designed for remote control. The starter mechanism consists of a ruggedly constructed three-pole magnetic contactor and thermal overload relays mounted on a porcelain base. An explosion proof cast iron inclosure surrounds the starter mechanism.

The starters provide low voltage protection and release, also time limit overload protection to alternating current single and polyphase across-the-line motors. Maximum ratings are: 1½ horsepower, 110 volt; 3 horsepower, 220 volt single phase; 5 horsepower, 220 volt; 7½ horsepower, 440-550 volt polyphase.

CATERPILLARS DEMONSTRATED

A school and demonstration of tractor equipment was held recently by the Caterpillar Tractor Co. of Peoria, Ill., in co-operation with the Allsteel Products Manufacturing Co., Wichita, Kans., and the Gulf Tractor & Equipment Co., Houston, Tex., at the sales room and warehouse of the last named company. The Gulf Tractor & Equipment Co. is distributor for Caterpillar tractors and accessory equipment. The demonstrations continued two full days with county farm agents as special guests the first day, municipal and county officers of South Texas the second day, and oil and pipe line men on the night of the second day. Uses of caterpillar tractors and improvements in tractor and tractor equipment construction were demonstrated. Moving pictures of caterpillar tractors and auxiliary equipment in pipe line construction and around oil fields and refineries were of particular interest. Representatives of the Caterpillar Tractor Co. present included H. B. Owens, Peoria, supervisor of industrial sales, P. R. Ferrel, Dallas, Tex., district representative, and Harry Penn, Peoria, director of extension training. H. R. Loudermilk, vice president of the Allsteel Products Manufacturing Co., Wichita, was present for his company. Representing the Gulf Tractor & Equipment Co. were Roger Barlow, vice president; Charles Calhoun, assistant vice president; Pat Skeen, sales representative; J. D. Farish, attorney; Harold Hightower and Ernest Cook, sales representatives.

Curtailed production may bring new production problems in 1932. Are you prepared to solve them?

Controlled production of petroleum in all fields seems to be the only immediate prospect of stabilizing conditions in the oil industry.

But, while restriction of the output will undoubtedly increase the selling price of crude, it will also probably have the effect of raising the production cost per barrel.

That means that oil field operators will be compelled to put new production economies into effect in order to be able to take full advantage of the price increase.

One way to do this is to make sure that all of your production equipment operates at the lowest possible cost, and does not necessitate excessive upkeep expense.

It will pay you better now than ever before to replace obsolescent, wasteful oil field equipment with the latest types of machines equipped with Timken Tapered Roller Bearings. Then you will be assured of keeping your operating and maintenance costs at an absolute minimum under all conditions.

And if no definite action is taken to restrict production generally, you will be in better position than ever to realize a satisfactory profit at the low selling prices which will, no doubt, continue to prevail.

Timken Bearings greatly reduce power demands, save lubricant, prevent wear, safely carry all radial-thrust loads and extend machine life in the face of the hardest usage. That is why more Timken Bearings are used in the oil fields than any other type of anti-friction bearing. Make "Timken Bearing Equipped" your guide to new economies and new opportunities in the New Year. The Timken Roller Bearing Company, Canton, Ohio.

TIMKEN *Tapered Roller* **BEARINGS**

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

PITS FOR EVAPORATING BRINE

Can you give me some information about the use of pits for disposing of salt water in oil fields? I would appreciate whatever you can tell me about the construction of such pits and the degree of success that has attended their use.—N. E. E.

Use of pits or earthen tanks in disposing of oil field brines has been attended by a fair measure of success under favorable conditions and when the construction of these pits has received proper care. In north central Texas, where this method has been tried, it was found that an excavation of about 958 square feet in area and 2 feet deep would evaporate water at the rate of 1 bbl. a day. It thus is evident that much space is needed to dispose of large quantities of water by evaporation. Combination of the pit method with seepage into some underground formation has been recommended as probably the most economical way of getting rid of salt water. As to the construction of evaporation pits M. H. Shanahan and Scott C. Miller, of the Continental Oil Co., make the following recommendations:

"The location and construction of salt water pits is a question which should be given very careful thought and attention. From an efficiency standpoint, the pit should be made to cover as much surface as possible, and only deep enough to care for what water must actually be held in storage. It has been proved by actual experiments that wind velocity greatly increases natural evaporation, and, therefore, from an evaporation standpoint, the pit should be located on high ground with the water surface as much exposed to the wind as possible. We do not mean by this that vaporized water should be allowed to blow away from the pit with the wind, as it would soon settle again and damage whatever vegetation it might settle upon. Therefore, the dikes of the pit should be given sufficient height above the estimated water level to prevent any amount of atomized water from escaping.

"The location of the pit should be selected on as level ground as possible so the water would have equal distribution over the pit, thus being more uniformly heated. However, in most cases it is desirable to gravitate the water from the gun barrel tank into the pit, and in that case of course, the elevation of the pit will depend upon the elevation of the gun barrel. In other words, we do not think in all cases it would be good policy to locate a pit on high ground for the purpose of obtaining more evaporation when the water would have to be pumped into it, as the expense of pumping would undoubtedly not be overcome by the additional amount of evaporation secured.

"We have found by experimenting that a great amount of water can be disposed of by spraying it under pressure, especially in the summer months, when the atomized water is exposed to the sun and hot atmosphere, and a great deal of it is evaporated even before it settles. These sprays are used in connection with evaporation pits and must be so placed that the wind does not carry the atomized water away before it settles into the pit. The majority of our Continental systems are thus equipped, in some cases the water being pumped by rod line pumps, other by ordinary working barrel pumps from beam wells or even pumping jack beams."

"SIDETRACKING" CASING

When a casing string has parted and some of it sticks in the well and efforts to remove it are unsuccessful, it is common practice to sidetrack it and go on drilling. What is the best way of performing this sidetracking operation?—D. S. G.

The operation of drilling past part of a casing string that cannot be withdrawn from the hole is a fairly easy one in soft formations, but likely to be difficult in hard rocks. In his work on "Petroleum Production Engineering," L. C. Uren says that since it is necessary for the new casing to make a slight bend in passing the old pipe, an effort should be made to enlarge the hole by underreaming for a distance of 60 or 75 feet above the top of the parted pipe. The drilling tools are then put to work as in ordinary drilling, upon the top of the old pipe, gradually battering and distorting it until the tools work off to one side. Difficulty sometimes is encountered in getting the new casing shoe to pass the top of the old pipe, but turning the string at the surface often will allow the shoe to slip past. Once by the upper end of the parted column, little difficulty results, the hole being drilled at one side of the parted column and the latter eventually cased off. Contact between the collars or ragged edges on the parted string and the shoe on the new string may cause slight delays, but patience in manipulating the casing at such times usually will overcome the difficulty.

Various types of reamers and eccentric bits are used by some drillers in sidetracking pipe to aid in enlarging the hole and clearing the way for the new pipe. Often better progress is made in drilling by the old pipe than in drilling the original hole. In some cases hundreds of feet of casing are successfully sidetracked in this way, and occasionally several separate sections of pipe will be cased off in a single well. The method described may also be employed in sidetracking lost drilling tools or other well equipment impossible to recover by fishing.

HOW GAS PRODUCES THE OIL

The part which natural gas plays in causing an oil well to flow, or rather how it plays that part, never has been quite clear to me. Of course I understand that the gas exerts a powerful expulsive force, which carries the oil to the surface, but just how and why that force starts operating when a hole is drilled into the ground and continues to operate indefinitely after that is not at all clear. Could you explain this point, if I have made myself understood?—S. S. L.

About as clear an answer to your question as could be provided is given by L. C. Uren in his "Dissolved Natural Gas in Oil in Ground." He says:

"A channel of drainage of necessity consists of the communicating sand pores; innumerable channels radiate in all directions from the well throughout the production thickness of the 'pay'; the pore spaces of all these channels are in communication vertically, horizontally, and in every possible direction. This means that the fluid contents of the pores, be it oil, gas, or a mixture of the two, can move in any direction but will move toward the point of lowest pressure, the well, by the channel offering the least resistance to flow.

"Originally all pores were under uniform pressure, also all gas dissolved in the oil, but, when release of pressure within the well disturbs the equilibrium, one or more gas bubbles form in each pore or cell. That formed in cell No. 1, nearest the well, promptly escapes to the well, carrying some of the surrounding and intervening oil with it. Release of pressure due to evacuation of the gas and a part of the oil from cell No. 1 creates a differential pressure between it and cell No. 2. The gas bubble formed in cell No. 2, therefore, expands and escapes to cell No. 1, where it undergoes further expansion and then escapes to the well, carrying with it a little of the oil from cell No. 2 and some of that left in cell No. 1 after the escape of its original gas bubbles. In the same way, a bubble of gas passes from cell No. 3 to No. 2, thence to No. 1 and to the well, carrying along some of the oil which fills the intercommunicating capillary channels with each successive expansion.

"A channel can now be imagined, composed of many thousand such pore cells, containing bubbles occasionally moving from pore to pore accompanied by simultaneous displacement of oil; this constitutes the modern conception of the mechanics of gas expulsion. The drainage system of a well consists of a multitude of such channels radiating outward in all directions from the well and communicating with each other, both laterally and vertically.

"The influence of the reduced pressure within the well gradually extends outward in all directions from the well as a center, each pore cell traversed by the gas bubbles representing a definite pressure loss. When these increments of pressure loss build up to a total, equivalent to the difference between the 'rock pressure' and the pressure within the well, the system comes into equilibrium and no further movement of gas or oil toward the well occurs. This determines the normal radius of drainage of the well, and it is apparent that the drainage radius under such conditions will vary directly with the differential between the maximum rock pressure and the pressure maintained within the well.

"The gas absorbed under pressure in the oil, or possibly entrapped in the pores of the sand, is the principal source of energy for expelling the oil from the sand. Occasionally the flow of oil is assisted by the pressure of free undissolved gas which may overlie the oil in the same body or by the movements of water. Graviation is comparatively a weak, slow-acting force, especially where the dips of the oil sands are low and where the sand is irregular in texture and bedding, these being the commonest conditions in the oil fields of the United States. The decrease in production follows closely the decline of gas pressure at the well and, when the pressure is practically exhausted, the well reaches a very low production, although much oil may remain in the sand. This shows that gravitation alone moves the oil so slowly that it has little practical effect. Experiments indicate the same fact, and there can be no doubt that the predominant expulsive force is the energy stored in the compressed gas absorbed in or associated with the oil. This is also the common opinion of others who have considered the subject, for the major part of the oil recovered from a field is produced during the periods when the wells flow or are pumped so 'high off bottom' that little or no oil could drain out of the sand against the column of fluid standing in the hole."

If you wish to go more thoroughly into this subject it is suggested that you obtain a copy of "Function of Natural Gas in the Production of Oil," by H. C. Miller, senior petroleum engineer of the U. S. Bureau of Mines and published by the American Petroleum Institute, 250 Park Avenue, New York. The book costs $2.

WHY WAS IT CALLED THAT?

PARAFFIN

Paraffin draws upon two Latin words for its name, "parum," too little, and "affinis," akin; that is little affinity. This derivation of the word is understood readily when it is remembered that paraffin, a tasteless, odorless, waxy mixture of hydrocarbons, is chemically inactive, being unaffected by most strong reagents. It might be well to mention here that the use of the word "paraffin" to describe the gummy material which causes endless trouble in oil wells is a loose one, for paraffin forms only a part of the sticky mass. Combined with it are fine sand, clayey materials, water, common salt and other foreign matter.

WHEN IS OUTPUT HIGHEST?

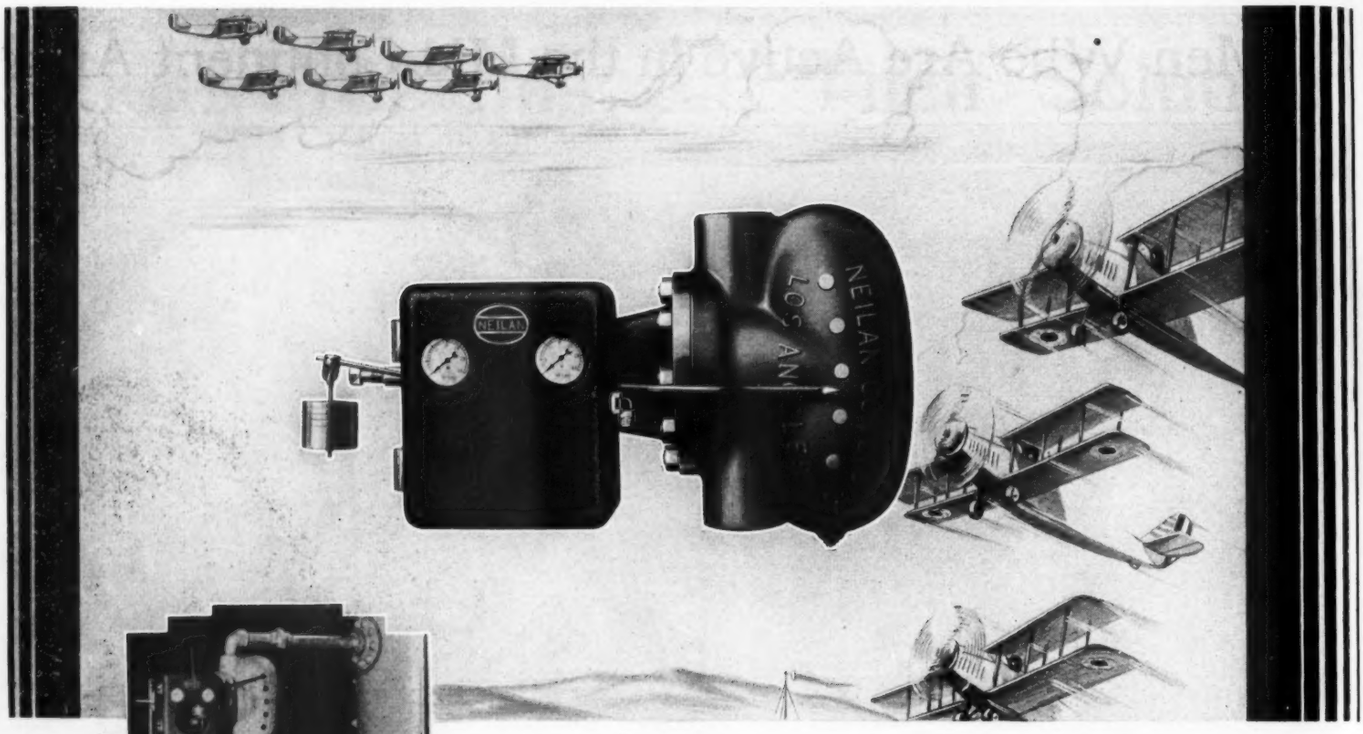
At what point in the life of an oil well is its production the highest as a rule? Is it when the oil sand is first entered or does it come after the oil from the area subject to drainage by the well has got a good start flowing through the sand?—E. E. N.

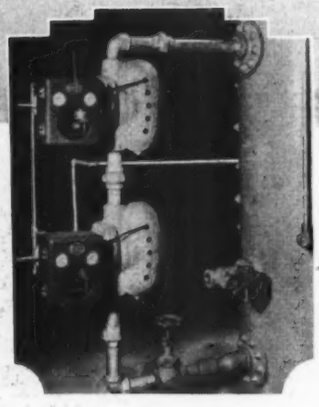
Records show that an oil well ordinarily produces at the heaviest rate immediately after it has been completed. In other words, the initial production of oil wells represents the maximum output. The flow of oil usually subsides, either gradually or rapidly as the case may be, after the early production stages.

During the last eight or nine years the daily average initial production of wells drilled in the United States has been higher than formerly. In 1930 the initial daily average production per well was 857 bbls., the largest ever recorded, indicating that new wells completed during the year came in exceptionally large producers. In 1929 the average initial production was much lower, 396 bbls.

Oil Men Who Are Active in the Mid-Continent Area

1—Left to right: John Morris, F. H. Kooyers and H. G. Broan, all of Barnsdall Oil Company. 2—Left to right—J. A. French and W. A. Roever, Continental Supply Company, Tulsa. 3—Charles Jacobson, superintendent of Southern Division, Barnsdall Oil Company, Tulsa. 4—Left to right: Lew S. Allard, Sr., editor, Evening Derrick, Drumright, Okla.; C. R. Smith and J. R. Creed, The Empire Companies. 5—Left to right: H. M. Stalcup, vice president in charge of production, Tulsa; Harold Decker, petroleum engineer, Tulsa; Fred D. Cummings, superintendent, Wilson, Okla.; John Shirer, superintendent, Seminole, Okla.; and J. S. Freeman, assistant to H. M. Stalcup, Tulsa, all of the Skelly Oil Company. 6—Left to right: Charles Thiret, oil well shooter, Drumright, Okla. and Dennison Jackson, The Texas Company, Drumright, Okla.





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This Neilan No. 106 must be ever alert and prevent the slightest water ever going over while gassing a plane. The float must sink in gasoline but float on the water under the gasoline. Such service demands reliability—*there can be no excuses for water in the gasoline once a plane takes off.*

While the above service for Neilan No. 106's is unique, it is not nearly as tough a job as they are performing in gasoline plants and refineries. These sensitive controllers are giving a fine performance at high temperatures on liquids so light that the float has little buoyancy. The 106 requires only the slightest force to operate and therefore is ideally suited for high gravity liquids.

You cannot afford to take chances when you are holding the levels on propane, butane, pentane and other high gravity liquids. Install Neilan Instrument Type Liquid Level Controllers and be assured of precise levels.

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YOU CAN BE SURE OF NEILAN PRODUCTS

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas, and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

QUALITY OF PETROLEUM FOR REFINING

Generally speaking, all oil is now bought and paid for on the A.P.I. gravity basis. During the past few years most major refiners have announced trade name brands of products, and whether there is any special virtue to these there does seem to be a tendency to demand special grades of oil for the manufacture of particular products. With the development of the octane grades of gasoline is it possible or probable that there will develop a demand for special grades of crude oil to the extent that various purchasers will be required to deliver to the refiner only those grades desired and therefore be compelled to enter into competition with other refiners for crude oil from pools producing oils of desired quality? The point is that as refinery skill develops there will be a greater demand for crude oils having specific properties and will this in time lead to the purchase of oils upon analysis rather than upon the gravity basis?—L. B.

The purchase of any crude material to be used in manufacture should be, and quite generally is, related to its composition. Various ores have always been sold on the basis of metal content and many of them are subject to deductions when objectionable substances are present. Impurities of this nature may be one or more base metals that are worthless or too expensive to get rid of in the smelting of the ore. Some ores are found containing such large quantities of impurities that the metal cannot be refined without serious contamination; a notable example being the ores of iron containing large percentages of phosphorous and sulphur. The cost of reducing an ore in the presence of these elements and obtaining the iron in a sufficiently pure condition is too great to compete with other and purer ores.

The major purchasers of petroleum have not applied their inspections to the same degree as practiced in other industries. The main purpose of a petroleum refinery has for some years been the production of a gasoline and the grading of crude oil on a gravity basis is a recognition of the fact that the maximum gasoline content oil is desired. The gravity is an approximate indication of the quantity of gasoline that may be obtained from the oil, the higher gravity oil usually yielding the largest quantity of gasoline and commanding the higher market price. The outstanding exception to this is the Pennsylvania oil which is limited in supply, about 65,000 bbls. a day, and is especially adapted to the manufacture of lubricating oil. A further important advantage is that the numerous refiners of Pennsylvania oil are located close to a large consuming market.

Until quite recently there was no serious effort made to classify gasoline as to quality, the first national specifications being prepared in 1918. Volatility, as determined by the distillation test, was stressed and limits for gum and sulphur have been included in the specifications, apparently without definite information. Subsequent studies have revealed that the chemical composition of a gasoline influenced the performance as reflected in the tendency to knock when used in the automobile engine. This is known to vary with the source of the petroleum when the gasoline is separated from the crude oil by the skimming process; also, under certain conditions the cracking operation may be controlled so that decomposition and reformation will proceed to produce high percentages of antiknock substances.

While the price table for crude oil does not mention any other property than gravity, it has always been true that other characteristics are considered by the purchasing agencies. An oil containing a large percentage of sulphur or with an especially bad odor is always difficult to sell, and there have been instances where such an oil could not be sold at any price. However, when production is low almost any kind of oil will be purchased, but when it is plentiful preference will be given to the high gravity sweet oils. The reason for this is the highest yield of gasoline will be obtained at the lowest cost.

As the refiner has learned how to purify a high sulphur oil, at a cost, he has also discovered methods to make and conserve those substances which give the gasoline a high antiknock rating, also at a cost. There are very few crude oils which will yield gasoline of high antiknock value by primary distillation, the largest supply being located in California, and the distribution is not such that a selection on a wide scale could be made. The cracking still is essential to the refinery of this day and since the refiner knows how to make knock rating, also how to control gum and sulphur, it seems there is little chance for the adoption of any further restrictions covering the quality of crude oil than those in practice now.

See this page, issues of December 10, 1931, Cost of Octane Graded Gasoline; December 17, 1931, Octane Number and the Price of Crude Oil.

ANTIFREEZE ALCOHOL SOLUTIONS

Interesting data are supplied by a correspondent (E. F. S.) concerning the boiling points of the two alcohols, methanol and ethanol (methyl and ethyl alcohol), as used in antifreeze solutions. The communication is given, in part, below.—Editor.

Our attention has recently been called to your article in the December 3 issue on the subject of "Alcohol for Antifreeze Solutions." Your complete reply to the question put to you by one of your subscribers reveals a comprehensive and unusually accurate fund of information. There is only one specific point in your comments to which we would take exception, and perhaps this is because we are essentially salesmen and want to put our best foot forward in talking to possible users, always consistent of course with facts.

It is true, as you state in the second paragraph of your article, "the boiling point of methyl alcohol is lower than the boiling point of ethyl alcohol by 25 degrees" but it is not true that "for this reason will have to be renewed more frequently than the solutions prepared with ethyl alcohol."

The freezing points you give for various antifreeze solutions are correct for the per cents indicated. The figures on methanol are for pure methanol and not the antifreeze grade which is marketed for antifreeze purposes, and therefore show clearly that a much lesser quantity of pure methanol is required for protection to any specific point than is required of alcohol. This, as you know, is due to the difference in molecular weight of the two materials. It follows that a solution of methanol and water compared with a solution of denatured alcohol and water for protection to like temperatures has practically the same boiling point.

Further, extensive tests have proven conclusively that methanol used as an antifreeze does not have to be renewed more frequently that denatured alcohol. On the other hand, its rate of evaporation from an automombile radiator, in the great majority of cases, is materially less than that of denatured alcohol.

It seems to use that all of this is very clearly set forth in the attached table showing boiling points of methanol-water and ethanol-water solutions for comparable freezing points and the weight per cent of alcohols in the vapors for the same solutions; vapor pressures are included in the tables and authorities are mentioned in the bibliography.

PERCENTAGE COMPOSITION OF VAPORS FROM AQUEOUS ALCOHOL SOLUTIONS

F.P. °F.	B.P. °F.	Wt. Alc. in liquid	Methanol —Wt. % Alc. in vapor at— B.P.	139°F.	104°F.	—Vapor pres. at— 139°F.	104°F.
+20	198	9 5	44 5	41	50	19 5 cm.	7 5 cm.
+10	190	16.5	59 5	56	66	23 5	9
0	185.5	22	66	65	74	26	10
—10	183.5	26 5	69	70	78	28	11
—20	179 5	31	73	75	80	30	12
—30	177	35	75.5	78	82	32	12.5
—40	175	39	77	80	83	33.5	13.5
			Ethanol				
+20	194	13	56.5	63	65	23 cm.	8 cm.
+10	188	22	67	70	72	25.5	9
0	185 5	28.5	70 5	73	75	27	9.5
—10	183 5	34	72.5	75	77	28	10
—20	182	39	73.5	76	78	29	10.5
—30	180 5	44.5	75	77	79	29.5	11
—40	179 5	50.5	76 5	78	80	30	11.5

Bibliography: F.P.—Pickering: J. Chem. Soc.: 63, 998 (1893). B.P.—(Int. Crit. Tables 3, 309; DuPont Ammonia Corp. Handbook). Vapor composition at B.P.—Principles and Practice of Industrial Distillation: Hausbrand. Vapor composition at 139° and 104°—Einfache und Fraktionierte Destillation: Rechenberg.

INDICATOR FOR TOTAL SULPHUR DETERMINATIONS

The inaccuracies of the several methods for determining total sulphur in petroleum products are recognized. Attention is directed to the importance of the indicator by Mr. Espach.—Editor.

This indicator solution contains 1 gram methyl orange and 3 grams indigo carmine per liter of water.

"I have just noticed an article in the December 17 issue of The Oil and Gas Journal by Doctor Francis on Determination of Sulphur in Light Petroleum Products and would refer you to the middle of the first column on page 75. We feel that the indicator we used when making sulphur determinations by the Edgar and Calingaert apparatus is a development that is distinctly our own. We will grant that Moerk used it in connection with some of his own work but this was quite foreign from anything pertaining to petroleum and to our knowledge, at least as far as the literature goes, the application of Moerk's method to the titration of the absorbing solution used in the sulphur determining apparatus, is distinctly our own; and we cannot impress too greatly the need for more accurate and sensitive titrations when determining sulphur. I think this was quite well brought out in our Technical Paper 513, U. S. Bureau of Mines." Ralph H. Espach, associate petroleum engineer, U. S. Bureau of Mines, Bartlesville, Okla.

In the article mentioned it is not clearly shown that the special indicator is a part of the Bureau of Mines method. This statement is made to clarify the reference.

HYDROGENATION PROCESS ESTABLISHED

We are interested to know whether there is a proven process of hydrogenating petroleum oils. If so, kindly advise to whom we may write for particulars and detailed information.—O. S. K.

Hydrogenation has been demonstrated as an advance beyond cracking for the synthetical preparation of gasoline from petroleum distillates and residues. Hydrogenation is not only a cracking process, it is also a building operation in that an outside substance, hydrogen, is made and incorporated in the final product. It is therefore possible to obtain a yield of gasoline, by cracking and hydrogenation, of over 100 per cent due to the hydrogen added.

The development of the automobile created such a demand for gasoline that the pressure process, for tearing apart the heavy molecules of petroleum to form lighter molecules, became commercially possible. Since gasoline is the product most desired by the petroleum refiner any process adapted to increasing the yield will be welcomed; provided the installation and operating costs are not prohibitive.

The principles involved in the hydrogenation of petroleum oils were discussed in an article in The Oil and Gas Journal, September 4, 1930, Page 40. Commercial units now in operation in the United States are based on the work of Bergius, who first used the process in Germany for making liquid products from coal. The fundamental patents, as applied to petroleum, of this process for use in the United States are controlled by the Standard Oil Development Co., 26 Broadway, New York City. An article describing this process will be found in The Oil and Gas Journal, October 2, 1930, Page 218.

Do you pay for Lubrication
once a month

or many times a day?

How often do you pay for lubrication? . . . Once a month? You pay one bill then—your oil bill. But—unknowingly—you may be paying substantial amounts every day. These amounts don't show on your oil bill. But they may show on your Power bill, on your Repair bill, in your Production costs, in your Maintenance expense—in the form of excessive costs due directly to incorrect lubrication.

It is easy to think "That's not happening in my plant." But hundreds of actual operating records prove that incorrect lubrication usually masks itself well. Often it is only when correct lubrication brings about savings you never thought possible, that the real amount of your former lubrication bill becomes known.

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WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 37)

DUVAL COUNTY

Frank Gravis et al's No. 2 Schallert, 425 ft. to E line, 150 ft. to S line of Blk. 10, Cain & Smith Subd. "A", Sur. No. 255 ..... T.D. 960 ft.; drlg.
O. W. Killam's No. 1 Sutherland, Sur. No. 7, 3,200 ft. to E line, 150 ft. to N line ..... T.D. 800 ft.; drlg.
Thomas & Tarver, Inc.'s No. 1 Wood-Welder, 500 ft. to N line, 4,326 ft. to W line of Sur. No. 103 ..... T.D. 2,300 ft.; standing.
Vacuum Oil Co.'s No. 1 Duval Land Co., 260 ft. from S and E lines of Sur. 96 ..... Location.

FRIO COUNTY

A. H. Wray's No. 1 Roche, 330 ft. from N and W lines of NW SE Sec. 123, A. Hutzler Sur. ..... T.D. 3,515 ft.; drlg.

GUADALUPE COUNTY

Barnhill et al's No. 1 H. L. Hoffman, 450 ft. to N and W lines of farm, in John G. King Sur. ..... T.D. 850 ft.; S.D.
M. W. Elser's No. 1 Wells, 2,790 ft. to W line, 150 ft. to S line of farm in Jose de la Baume Sur. ..... T.D. 200 ft.; set surface csg.
J. M. Scott's No. 1 E. Drumm, 250 ft. to W line, 150 ft. to S line of tract, C. Campbell Sur. ..... T.D. 700 ft.; drlg.

GOLIAD COUNTY

Camp & Stanolind's No. 3 Pettus, 2,438 ft. N, 74 de. E of No. 2 ..... T.D. 3,190 ft.; drlg.
Plymouth Oil Co.'s No. 1 Parks, 5 miles NE Goliad ... T.D. 4,560 ft.; testing.
Neal et al's No. 1 J. M. Pettus, 10,700 ft. to S line, 2,500 ft. to E line of Pedro Trevino Sur. ..... T.D. 4,000 ft.; S.D.
Simms et al's No. 1 J. C. Tom ..... Making location southwest pool.

GONZALES COUNTY

Johnson & Mattocks' No. 1 J. James, 12 miles NE of Gonzales city, 900 varas from E line, 300 ft. from S line of tract in M. A. Williams Sur. ..... Location.

HIDALGO COUNTY

American Petroleum Engineering Co.'s No. 1 J. B. Brock, 300 ft. from S and E lines of Blk. 15, Porcion 79 ..... Duplication, dropped.
Barrett-Kanellos' No. 1 J. B. Brock, 7 miles W and N from Mission (on Monte Cristo road) ..... T.D. 730 ft.; standing.
Davenport et al's No. 1 Wells, 30 miles W of Mission... Moving in rig.
LaJoya Oil & Gas Co.'s No. 1 W. L. Hart, 6 miles W from Mission, north of San Fordyce ..... T.D. 1,600 ft.; drlg.
Dayle L. Smith's No. 1, 18 miles W from Edinburg ..... T.D. 4,026 ft.; standing, show gas.
San Roman Oil Co.'s No. 1 J. T. Lomax, 7,500 ft. from S and E lines of San Roman Sur. ..... Location.
Dayle L. Smith's No. 3 Daskam, SW part of county..... Spudded in.

JIM HOGG COUNTY

L. W. Connor's No. 1 Holbien, 150 ft. from N and E lines of Blk. 7, Sur. 7, Holbien Sub. of Las Animas grant ..... Derrick.
R. F. Foree's No. 1 Holbien, 150 ft. from N and W lines of Blk. 54, Sur. 9, Holbien Sub. of Las Animas grant ..... Derrick.
T. P. Morgan's No. 1 fee, 2,323 ft. to N line, 1,640 ft. to E line of Share 19, Palo Blanco grant ..... T.D. 133 ft.; set surface csg.

JIM WELLS COUNTY

Vacuum Oil Co.'s No. 1 Seeligson ..... Making location.

KARNES COUNTY

A. E. Edmiston's No. 1 O. L. Cochran, 150 ft. from S line, 500 ft. from E line of farm in D. B. McConnell Sur. ..... T.D. 1,600 ft.; drlg.
V. F. Neuhaus' No. 1 Della B. Tips, 1,050 ft. from SE line, 960 ft. from SW line of 1,037.5 ac., Carlos Martinez Sur., 5 miles SE of Kenedy ..... Rigging up.

KENDALL COUNTY

Dixon Oil Co.'s No. 1 Ottmar Behr, 823 ft. from S and N lines of Jessie Wilson Sur., 3 miles S of Sisterdale ..... T.D. 2,708 ft.; standing.
Fred S. Dibble's No. 1 Eliebrach, Sur. 77, N part of county ..... T.D. 50 ft.; S.D.

KERR COUNTY

Evans & Gant's No. 1 E. Young, A. E. Burge Sur. No. 28. T.D. 1,312 ft.; standing
Evans & Gant's No. 2 Love, 150 ft. S and W line of Sur. 1,593 ..... T.D. 5,335 ft.; drlg.

LA SALLE COUNTY

Buckley Ranch O. & G. Co.'s No. 1 Buckley, 200 ft. from S line, 330 ft. from W line of Sur. No. 37 ..... T.D. 4,800 ft.; drlg.

LIVE OAK COUNTY

J. A. Harper's No. 1 fee, 2,130 ft. to N line, 510 ft. to E line of farm, J. Pointevant Sur. No. 37 ..... Derrick up; moving in machine
Henderson Coquat's No. 1 Hewitt ..... T.D. 400 ft.; standing.
V. G. Schimmel's No. 1 Terrell in Mark Killely Sur..... T.D. 1,610 ft.; abnd., dry.
Phillips Petroleum and Henderson Coquat's No. 1 Sanger, 150 ft. to most S of N lines, 2,000 ft. to W line of tract ..... T.D. 2,640 ft.; drlg.

LEE COUNTY

Henderson & Holden's No. 1 Dismuke, 600 ft. to E line, 150 ft. to N line of farm, J. Maxmillan Sur. ..... Rigging up.
A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ..... T.D. 3,890 ft.; S.D.
C. B. Polk et al's No. 1 Stoltz, Hiram Donohue Sur.. T.D. 2,300 ft.; S.D.
Chadwick et al's No. 1 Hickey, 1,000 ft. to NW line, 300 ft. to NE line of farm in Warrelman Sur. ..... T.D. 20 ft.; spudded in.
Washington-Lee Oil Co.'s No. 1 L. Hicket, 1,100 ft. from N line, 200 ft. from E line of tract in J. D. Varrelman Sur. ..... Location.

McMULLEN COUNTY

Jacob, Buzzini & Pickett's No. 1 Brewer, 750 ft. NE of Pickett's No. 1 Nelson ..... Location.

MAVERICK COUNTY

I. N. Boicourt's No. 1 Bandera, School Land ..... T.D. 2,284 ft.; standing.

MEDINA COUNTY

Frank A. Brown's No. 1 Fohn, 150 ft. from E line, 790 ft. from N line of J. F. Torry Sur. No. 113 ..... T.D. 922 ft.; twisted off drill stem, fishing.
C. J. Webster Oil & Gas Co.'s No. 1 Adams, 2,450 ft. to N line, 160 ft. to E line of Jos. Hillemeyer's No. 25. T.D. 1,915 ft.; drlg.

MILAM COUNTY

H. W. Elliottt's No. 1 Marek, 767 ft. from N line, 500 ft. from W line of 160-ac. tr. in B. Wickson Sur. ..... T.D. 1,456 ft.; S.D.
Nowlen's No. 1 Beard, 1,350 ft. from SE line, 450 ft. from SW line of farm, in J. F. Guthrie Sur., 4 miles S Thorndale ..... T.D. 2,036 ft.; S.D.
Red Bank Oil Co.'s No. 2-A J. A. Foster, 5,243 ft. to SW line, 150 ft. to NW line of farm ..... T.D. 3,900 ft.; drlg.

NUECES COUNTY

Southern Crude Oil Pur. Co.'s No. 1 Chas. E. Stratton, 1,650 ft. E line, 330 ft. S line of P. Sancho Sur. ..... T.D. 4,801 ft.; tested small gas well.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175 ..... T.D. 2,530 ft.; S.D.

STARR COUNTY

R. E. Johnson's No. 1 Goodrich, 1,214 ft. from N line 1,065 ft. from W line of tract, 1¼ miles N of Rio Grande City ..... Moving in rig.
Strauch Oil Corp.'s No. 1 M. E. Salinas, 155 ft. from N and W lines of lease in Porcion 80, Share 38 ..... Location.
R. B. Suttle's No. 1 Guerra, 2,000 ft. to N line, 270 ft. to W line of Porcio 110 ..... T.D. 730 ft.; drlg.
Jess Williams' No. 1 Welsh, 1,120 ft. to W line, 1,500 ft. to N line of tract in Pedernal grant ..... T.D. 100 ft.; drlg.

TRAVIS COUNTY

C. R. Franklin et al's No. 1 J. Wilson, 160 ft. from N and W lines of farm in A. Alexander Sur. ..... T.D. 1,180 ft.; S.D.
Fuchs et al's No. 1 Shiffler, 1,000 ft. to N line, 160 ft. to E line of farm, A. C. Caldwell Sur. ..... T.D. 515 ft.; drlg.
Ray & Henze's No. 1 Hatech, in C of tr. in S. Hamilton Sur. ..... T.D. 540 ft.; S.D.

WEBB COUNTY

Harris, Hayes & Newton's No. 1 Laurel, 300 ft. from N and E lines of Blk. 5, Sur. 715 ..... T.D. 900 ft.; drlg.
O. W. Killam's No. 1 Bruni, 1,667 ft. to N line, 805 ft. to W line of Sur. No. 445 ..... T.D. 2,465 ft.; drlg.
Power & Dettenhaim's No. 1 Cowan & Goss, 1,870 ft. from W line, 1,656 ft. from N line of Sur. No. 1,606.. T.D. 455 ft.; drlg.
Fansler, Johnson & Peacock's No. 1 Laurel, 425 ft. to N line, 600 ft. to E line of Blk. 10, Sur. 271 ..... T.D. 100 ft.; drlg.

WILLIAMSON COUNTY

Burns et al's No. 1 Wilder, 1,800 ft. to N line, 200 ft. to W line of tr. in H. Owens Sur. ..... T.D. 1,480 ft.; drlg.
Hays & Gee's No. 1 E. G. Johnson, 1,800 ft. from N line, 170 ft. from E line of tr. in B. C. Low Sur., S of Georgetown ..... T.D. 1,595 ft.; S.D.
McLean's No. 1 R. C. Miller, 300 ft. from S line, 150 ft. from W line of farm in Manlove Sur. ..... T.D. 1,700 ft.; S.D.
R. S. Wilson's No. 1 Speckles, 150 ft. N of road, 600 ft. from W line of farm in J. Jordan Sur., 1 mile N of Coupland ..... T.D. 875 ft.; S.D.

WILSON COUNTY

A. M. Blume's No. 1 Nickolson, C. Diaz Sur. ..... T.D. 1,600 ft.; S.D.

ZAPATA COUNTY

Ballard & Mercer's No. 1 Flores, 500 ft. from NE line, 580 ft. from SE line of Blk. 27, Porcion 37 ..... T.D. 930 ft.; drlg.
J. M. Gier's No. 1 Garza estate, 150 ft. to NW and SW lines, Blk. 18, C. A. Douglas Sub., M. Garza land in Comitas grant ..... T.D. 1,512 ft.; abnd.
Lowe, Rogers et al's No. 3 Prudencia Benavides, 510 ft. to S line, 450 ft. to W line of Blk. 16, Sur. No. 11.. T.D. 1,454 ft.; comp. 6,000,000 ft. gas.
United Prod. Co.'s No. 10 Measles, 1,000 ft. to NE line, 1,550 ft. to SE line of Sur. No. 207 ..... T.D. 1,344 ft.; tested 7,000,000 ft. gas; recementing csg.
United North & South Development Co.'s No. 1 Gutierrez, 150 ft. from NE line, 488 ft. from NW line of Blk. 325 of E. M. Doty lease in Charco Redondo grant ..... Location.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 37)

CHITTIM POOL—MAVERICK COUNTY

Texas Gas Utilities' No. 8 Chittim, 24 ft. S of No. 7 Chittim ..... T.D. 4,850 ft.; standing.

SAXET FIELD—NUECES COUNTY

Gulf Coast Oil Co.'s No. 1 Sagarin ..... T.D. 4,750 ft.; standing
Gulf Coast Oil Co.'s No. 1 Elder, NW of same company's No. 1 Harrell ..... T.D. 5,070 ft.; drlg.
Houston Oil Co.'s No. 1-A T. M. Harrell, 330 ft. to N and E lines of tract in H. B. Sheppard Sur. ..... Location.
Neal-Milton and Kepley Pet. Co.'s No. 2 J. N. Roark, 200 ft. to S line, 200 ft. to E line of 106-ac. tr. ..... T.D.
Saxet Oil Co.'s No. 3 Donigan, north offset to Zoch's No. 1 Baldwin ..... Location.
Saxet Oil Co.'s No. 5 Well, 3,041 ft. to N line, 333 ft. to W line ..... Drlg. 1,920 ft.

WHITE POINT POOL—SAN PATRICIO COUNTY

Saxet Oil Co.'s No. 18 Rachel ..... T.D. 2,212 ft.; drlg.

LOS OLMOS POOL—STARR COUNTY

Hooks & Weaver's No. 3 Kelsey-Bass, 1,050 ft. to W line, 1,800 ft. to S line, Blk. 2, Sub. of Porcions 75, 76, 77, Jurisdiction of Camargo, Sur. No. 6 ..... T.D. 515 ft.; waiting on cement.
Jenkins & Powers' No. 1 Kelsey-Bass, Porcion 75 ..... Duplication, dropped.
Rio Oil & Gas Co.'s No. 1 Kelsey-Bass (formerly carried as Los Olmos Oil & Ref. Co.'s No. 1 Kelsey-Bass) ..... T.D. 910 ft.; drlg.
Rio Oil & Gas Co.'s No. 2 Kelsey-Bass, W offset to Hooks & Weaver No. 1 ..... T.D. 440 ft.; comp. 40 bbls.
San Marcos Oil Co.'s No. 3 Ivey, 450 ft. W of No. 2..... T.D. 423 ft.; drlg

CAROLINA-TEXAS POOL—WEBB COUNTY

Carolina-Texas O. & G. Co.'s No. 10 Barnsley, 150 ft. to E line, 200 ft. to S line of Blk. 14, Sur. 268..... T.D. 2,196 ft.; setting csg.
Usher Carson's No. 4-D Webster, 150 ft. to S and W lines of NE quarter, Sur. 684 ..... T.D. 3,052 ft.; set csg.

COLE POOL—WEBB COUNTY

O. W. Killam's No. 22 Bruni, 1,755 ft. to SW line, 186 ft. to NW line, Sec. 9 ..... T.D. 2,018 ft.; abnd.

ESCOBAS POOL—ZAPATA COUNTY

Allied Oil & Gas Co.'s No. 18 Gutierrez, 550 ft. from SW line, 150 ft. from SE line of Share 5, Fansler Partition, Comitas grant ..... T.D. 1,466 ft.; set csg.
Allied Oil & Gas Co.'s No. 19 Gutierrez, 850 ft. from SW line, 150 ft. from SE line of Share 4, Fansler's Partition, Comitas grant ..... Location.
Allied Oil & Gas Co.'s No. 20 Gutierrez, 1,405 ft. from SW line, 150 ft. from SE line of Share 4, Fansler's Partition of Comitas grant ..... Location.
E. K. Bateman's No. 1 M. Garza, in Comitas grant, 200 ft. to NW line, 660 ft. to NE line of Blk. 29 ..... T.D. 1,925 ft.; abnd.
F. H. Etheridge's No. 3 Jose Bustamente, 940 ft. from NE line, 150 ft. from NW line of 80-ac. tract in Share 35, Comitas grant ..... T.D. 1,477 ft.; comp. 150 bbls.
F. H. Ethridge's No. 4 Bustamente, 1,240 ft. from NE line 150 ft. from NW line of Sun 80-ac. lease, Share 35 Fansler's Partition, Comitas grant ..... T.D. 1,400 ft.; drlg.
F. H. Etheridge's No. 5 Bustamente, 1,540 ft. from NE line, 150 ft. from NW line of Sun 80-ac. lease, Share 35, Fansler's Partition, Comitas grant ..... Location.
Fairway Production Co.'s No. 3 Jose Bustamente, 651 ft. from SW line, 150 ft. from NW line of 53.19-ac. tract in Share 35, Comitas grant ..... T.D. 1,485 ft.; comp. 150 bbls.
Grayburg Oil Co.'s No. 1 F. G. Martinez, 150 ft. from S and W lines of 240-ac. tract in E¼ of Sur. 4 .... T.D. 1,955 ft.; standing.
O. W. Killam's No. 11 (S. Bustamente) Medina, 300 ft. from NE and SE lines of most easterly SE cor. of Share 34, Comitas grant ..... T.D. 1,465 ft.; set csg.
O. W. Killam's No. 16 Jose Bustamente, 225 ft. from SW line, 150 ft. from SE line of Blk. 12, Share 5, Comitas grant ..... T.D. 1,373 ft.; set csg.
O. W. Killam's No. 11 Bustamente, 150 ft. to SE, 550 ft. to NE lines of Share 5, Fansler's partition of Comitas grant ..... T.D. 1,465 ft.; comp. 200 bbls.
O. W. Killam's No. 12 Bustamente, 150 ft. from SE line, 890 ft. from NE line of Blk. 11, Share 5, Fansler Partition of Comitas grant ..... T.D. 1,457 ft.; set csg.
Pray & Chamberlain's No. 4 Garza, Blk. 1, Comitas grant ..... Rigging up.
S. R. C. Oil Co.'s No. 5-E Trevino, 450 ft. to W line, 1,120 ft. to SW line. Blk. 12, Sur. No. 66 ..... T.D. 1,258 ft.; comp. 50 bbls.
Winch & Billings' No. 5 Jose Bustamente, 150 ft. from NE and NW lines of 31-ac. tract out of Pal-Mar tract, Share 35, Comitas grant ..... T.D. 1,470 ft.; comp. 200 bbls.
Winch & Billings' No. 6 Bustamente, 1,218 ft. from NE line, 150 ft. from NW line of 31-ac. Pal-Mar lease, Share 35, Fansler's Partition, Comitas grant ..... T.D. 1,300 ft.; drlg.

KILLAM-CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 47-B Cuellar, Sur. 277 ..... T.D. 2,250 ft.; drlg.

CHARCO REDONDO POOL—ZAPATA COUNTY

Bob & Richey's No. 27 Martinez, 870 ft. to SE line, 150 ft. to NE line, Blk. 24, Duke sub. Charco Redondo grant ..... Drlg.
Bob & Richey's No. 28 Martinez, 930 ft. from SW line, 615 ft. from SE line, Blk. 24, Duke Sub., Charco Redondo grant ..... Location.

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WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 33)

C. M. Talley et al's No. 1 C. M. Talley, 1,980 ft. W, 660 ft. S, NE cor. SE, Sec. 29-11-10.. .... S.D. 1,380 ft.

OUACHITA PARISH

United Gas Public Service Co.'s No. 1 Wiley, Sec. 8-18-5, 660 ft. S and E, NW cor. ..... Rigging up.
Wilson & Mitchell's No. 1 Williams, Sec. 5-16-1e, 330 ft. E, 240 ft. S, NW cor. SW SE..... Drlg. 1,300 ft.

RED RIVER PARISH

La. Oil Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-13-11..... Spudded and S.D. 50 ft.
Mack Jourden Co.'s No. 1 Lockett, 4,035 ft. S, 1,080 ft. E, NW cor. SW, Sec. 29, in Sec. 32-13-10 ..... W.O.S.R. 2,750 ft.

RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5 ..... Derrick abd.
National Gas Co.'s No. 1 Singletary, 1,980 ft. N, 660 ft. W, SE cor., Sec. 20-18n-7e..... S.D. 2,515 ft.
Southern Carbon Co.'s No. 1-B C. M. Noble, 2,966 ft. N, 1,525 ft. W, cor. Secs. 7, 8, 17 and 18, in Sec. 37-15-6.. Location abd.

SABINE PARISH

Abney & Davidson's No. 1 Frank Martinez, 330 ft. S and W, NE cor. NW, Sec. 11-7-13..... Rigging up.
Beene et al's No. 1 Ezernack, Sec. 2-7-13, 1,070 ft. S, 250 ft. W, NE cor. ..... S.D. for fuel 1,000 ft.
Beene et al's No. 1 Vincent, Sec. 6-7-16..... Rigging up.
Coates Pet. Co.'s No. 1 Parie, Sec. 2-7-13, 300 ft. S and W, NE cor. NE SE..... Rigging up.
W. M. Coates' No. 1 Stille, 330 ft. N, 660 ft. W, SE cor., Sec. 35-8-13 ..... Derrick.
Davidson & Grigsby's No. 1 Martinez, Sec. 2-7-13, 330 ft. S and W, NE cor. NW SE..... Drlg. plug 2,037 ft.
R. L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 200 ft. W, NE cor. NW NW, Sec. 10-8-13..... Drlg. lime 4,204 ft.
Gehring Oil Co.'s No. 1 Skinner, Sec. 16-8-11, 615 ft. E, 565 ft. S, NW cor. NW..... T.D. 2,777 ft; S.D; W.O.
W. F. Lacey's No. 1 Parie, 330 ft. S and W, NE cor. SW, Sec. 2-7-13..... Set 10-in. 100 ft.
T. M. LeGrand's No. 1 Peterson, 330 ft. N and E of C. Sec. 34-7-13 ..... Arranging to set 6-in. 2,243 ft.
Geo. LeGrand's No. 1 McGough, Sec. 3-8-10..... Derrick.
Loring Oil Co.'s No. 20 Bowman-Hicks, Sec. 4-7-12, 330 ft. S and W, NE cor. NW NW ..... Derrick.
J. J. Keen, tr.'s No. 1 Bolton (no check), Sec. 31-9-13... Drlg. lime 2,083 ft.
Rush & French's No. 1 Martinez, Sec. 11-7-13, 330 ft. S, 990 ft. E, NW cor. ..... Derrick.
Ruston Drlg. Co.'s No. 1 McGehee, Sec. 28-8-12, 330 ft. N and W, SE cor. SW SW..... Rigging up.
Smitherman & Grigsby's No. 1 Gardner, 330 ft. S and E, NW cor. NE NE, Sec. 12-7-11..... Set 6-in. 2,426 ft.
A. H. Thames' No. 1 Edward est., 150 ft. NW SE cor. NE SE, Sec. 8-8-13..... S.D. 1,200 ft.

TENSAS PARISH

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12..... S.D. 3,545 ft.

ARKANSAS

COLUMBIA COUNTY

Kendall Oil Co.'s No. 1 Fullenweider, Rhea & Kitchen, Sec. 12-17-22 ..... S.D; W.O. 814 ft.

CLAY COUNTY

R. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C, NW SE, Sec. 4-20-8 ..... S.D. 1,350 ft.

CLEVELAND COUNTY

Crum & Stillwell's No. 1 E. R. Bell, Sec. 10-10s-12w.... Rigged up and S.D.

CLEBURNE COUNTY

(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9..... S.D. 3,740 ft.

DALLAS COUNTY

J. H. James, tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. SE, Sec. 11-9-15..... S.D. funds 2,520 ft.
Zepp O. & G. Co.'s No. 3 Hillman, Sec. 20-10-13, 180 ft. N, 450 ft. E, SW cor. NW NE..... Location.

DREW COUNTY

Co-Operative Dev. Co.'s No. 1 Ogles, Sec. 35-15-5, 330 ft. S and E, NW cor. NE NW..... Drlg. 1,875 ft.

HOT SPRINGS COUNTY

Star Oil Co.'s No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16..... S.D. 1,300 ft.

LINCOLN COUNTY

Lawrence Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 200 ft. W, NE cor. NE SW, Sec. 5-8-7..... S.D. 2,800 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 25-12-19..... Location.
Stephens et al's No. 1 Dierke Lbr. Co., Sec. 29-12s-31w, 150 ft. S, 330 ft. E, NW cor. NE NW..... Drlg. shale 1,825 ft.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26..... S.D.; W.O. 3,570 ft.

MILLER COUNTY

W. E. Noel et al's No. 1 Dickson hrs., 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-20-27..... S.D. 1,955 ft.

OUACHITA COUNTY

Copenhaven et al's No. 2 Berg, C SE SE, Sec. 13-15-17... S.D. 2,011 ft.
Wilson & Chapman's No. 1 Lambert, Sec. 10-15-16, 600 ft. S, 150 ft. E, NW cor. SE SE..... S.W. and abd. 2,450 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14..... T.A. 2,909 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24..... S.D; W.O. 1,020 ft.
E. R. Henderson's No. 1 W. B. East, 200 ft. S, 150 ft. W, NE cor., Sec. 13-9-23..... S.D. 338 ft.

PRAIRIE COUNTY

Powell Creek O. & G. Co.'s No. 1 Kloss, NE SW, Sec. 2-4n-6w ..... Partly rigged up and S.D.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26..... S.D; T.D. 1,436 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29 ..... S.D. 1,860 ft.

SEVIER COUNTY

Tristate Oil Co.'s No. 1 Grimble, Sec. 34-8-22, S½ SW... Drlg. 950 ft.

UNION COUNTY

Drillers Oil & Dev. Co.'s No. 1 Pickering, 220 ft. N, 668 ft. E, SW cor. NW NE, Sec. 1-17-16..... Cutting liner with ripper 2,134 ft.
H. H. Helms' No. 1 C. H. Murphy, NE cor. NW NE, Sec. 31-16-14..... Rigging up.
A. M. Hill et al's No. 1 J. W. Barnes, Sec. 21-19-16, NE cor. Sec. ..... Derrick pattern.
Modisette et al's No. 1 Union Sawmill Co., Sec. 13-18-13, 330 ft. S and E, NW cor. SW NW..... Began Dec. 28; drlg. 30 ft.
Sunby et al's No. 2 Perdue, Sec. 33-16-14, 75 ft. S, 150 ft. E, NW cor. Sec. ..... W.O. 3,247 ft.

WASHINGTON COUNTY

(Cable tools)

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... S.D. for funds 1,795 ft.

YELL COUNTY

(Cable tools)

Tegmeir & Luckett's No. 1 Falcon, Sec. 36-7-21..... S.D. 5,710 ft.

EAST TEXAS

BOWIE COUNTY

Logan & Elliott's No. 1 Smith, 9,600 ft. S, 2,500 ft. W, NE cor. Chas. Lewis Sur. ..... S.D. 4,505 ft.
Parkington & Jones' No. 1 W. W. Whybark, 200 ft. S, 200 ft. W, SW cor. J. H. Dyer Sur. ..... S.D. 1,880 ft.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. ..... S.D. 3,000 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr. in J. H. Murphy Sur. ..... S.D. 3,600 ft.

CASS COUNTY

J. F. Morrisey's No. 1 T. J. Wilson, 1,088 ft. S of N line, 2,376 ft. E of W line of H.R.S., J. R. McFarland Sur. ..... S.D. 3,670 ft.
Davis & Pigg's No. 1 Roy Bryan, SW cor. Roy Bryan 88-ac. tr., Albert H. Latimer Sur. ..... S.D. 2,055 ft.
Everets Drlg. Co.'s No. 1 H. W. Whittington, 200 ft. S and W, NE cor. 69-ac. Whittington tr., L. Strong Sur.. S.D. 3,922 ft.
Geo. McKamie's No. 1 R. E. Hall, 150 ft. N, 150 ft. W, SE cor. Hall's 117-ac. tr., H. Buckler Sur. ..... S.D. 4,195 ft.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. ..... S.D. 4,390 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. .... S.D. 2,280 ft.
Olds & King's No. 2 Anthony, John C. Byers Sur. ..... S.D. 1,750 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... S.D. 955 ft.

HARRISON COUNTY

Lloyd Oil Corp.'s No. 1 E. S. Timmons, 150 ft. from N line to 250 ft. from E line of 105-ac. tr., Findley Sur. ..... S.D. 4,195 ft.
Ryan Consolidated Pet. Corp.'s No. 1 J. M. Fuhr, 1,-300 ft. N of NW cor. T. J. Copelin Sur., 1,675 ft. SW at right angles to NW SE line of O'Neal Sur. .. Derrick.

MARION COUNTY

Geo. Hindeman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. ..... S.D. 2,380 ft.

PANOLA COUNTY

Hoffer et al's No. 1 Cameron Lbr. Co. center 1,306-ac. tr. in W. M. A. LaGrove Sur. ..... Derrick.
Moses & Wallace's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur. .. Spudded and S.D.
G. A. Davidson's No. 1 Latham, Wm. Rich. Sur. ..... S.D. for fuel 3,010 ft.
J. L. Nelson et al's No. 1 J. W. Williams, 300 ft. S, 700 ft. W, NE cor. Williams' 67-ac. tr. in James Hanks Sur. ..... Reaming 2,875 ft.
United Gas Public Service Co.'s No. 11 Werner, 1,162 ft. N, 2,418 ft. W, SE cor. D. B. Lewis Sur. ..... S.D. 5,582 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughbart Sur. ..... S.D. 2,795 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. .... S.D. 2,280 ft.

SHELBY COUNTY

Chapperell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ... Arranging to whipstock; T. D. 3,-127 ft.
Harry Elliott's No. 1 Pickering Lbr. Co., 1,000 ft. N, 150 ft. E, SW cor. 361-ac. tr., G. H. Patterson Sur. .. Set 10-in. 108 ft.
K. H. Francis' No. 1 John Mims, Mary Smith Sur. ..... S.D. 3,334 ft.
H. H. Gracey's No. 1 J. A. Morrison, 1,500 ft. N, 200 ft. E, SW cor. J. A. Morris' 109-ac. tr., Wm. English Sur. ..... S.D. 2,600 ft.
Henry Maulding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 80-ac. tr., A. D. Fountain Sur. ..... S.D. 3,246 ft.
McRoby et al's No. 1 Windham, Wm. Leach Sur., on Windham 296-ac. tr. ..... S.D. high wtr. 3,393 ft.
Ridgeway et al's No. 1 Polley, Domingo Gonzales Sur., 3,180 ft. E of SW cor., 160 ft. N at right angles of Polley 457-ac. tr. ..... Set 8-in. 822 ft.
C. H. Tautenhahn's No. 1 J. C. Bogard, 300 ft. S, 900 ft. E, NW cor. J. C. Bogard's 52-ac. tr., Thomas Baker Sur. ..... S.D. 20 ft.
Tenant et al's No. 1 J. Henry, C. Z. Walker Sur. ..... S.D. 3,457 ft.
United North & South Prod. Co.'s No. 1 Windham, 800 ft. W, 1,050 ft. N, SE cor. of Windham 171.5-ac. tr. on A. H. English Sur. ..... S.D; W.O. 3,391 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 33)

M. J. Kissick's No. 1 Brown Lbr. Co., Sec. 1-7-11, 1,-070 ft. S, 1,225 ft. E, NW cor. NE..... Set 6-in. 2,400 ft.
Zeke Lohman's No. 1 McCormick, 660 ft. E, 330 ft. N, SW cor. NE SW, Sec. 2-7-11..... S.D. 1,606 ft.
Loring Oil Co.'s No. 18 Bowman-Hicks, 1,280 ft. S, 275 ft. E, NW cor. SW NW, Sec. 15-7-12..... Cored 4-ft. lime 4,379 ft.
L. K. McGuffin's No. 1 Bush, NW cor. NW SE, Sec. 1-7-11 ..... Tested dry 2,454 ft; S.D; W.O.
Ben Merritt, tr.'s No. 2 Byrd, Sec. 1-7-11..... S.D. 2,480 ft.
Ohio Oil Co.'s No. 11 Bowman-Hicks, Sec. 2-7-11, 330 ft. N, 990 ft. E, SW cor. NW..... Set 10-in. 134 ft; drlg. 1,360 ft.
H. W. Perritt's No. 6 Bowman-Hicks, Sec. 2-7-12, 150 ft. S and W, NE cor. SE NE..... W.O.S.R. 2,317 ft.

ARKANSAS

UNION COUNTY—EL DORADO

Ark. O. & G. Co.'s No. 4 Anderson, Sec. 31-17-15, 2,005 ft. S, 150 ft. W, NE cor. NW SW..... W.O.S.R. 2,149 ft.
Lion O. & R. Co.'s No. 9-A G. P. Hayes, 242 ft. S, 246 ft. W, NE cor. Lot 5, NE, Sec. 4-16-15..... D.S. stuck 7,255 ft.
Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15..... S.D. 2,608 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1 Winn est., 330 ft. S and E, NE cor. S½ NW, Sec. 11-18-13..... T.A. 3,586 ft.
Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13..... Location.
Wilson & Chapman's No. 1-B Hadley, Sec. 3-18-13, 330 ft. S and W, NE cor. SE NW..... Waiting on 6-in. csg. 3,542 ft.

HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Argus, 755 ft. N, 699 ft. W of Mile Post No. 27, W. Mack Sur. ..... Set 6⅝-in. 2,840 ft.

EAST TEXAS

PANOLA COUNTY

Daisy O. & G. Co.'s No. 1 Rucks, Jno. Palmer Sur..... S.D. 3,194 ft.
Nat. Gas Prod. Co.'s No. 3 Mays, 158 ft. S, 443 ft. W, NE cor. 42.5-ac. tr., Jane Thorpe Sur. ..... Rigging up.
United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse., in B. C. Jordan Sur. .... Location.

MISSISSIPPI

HINDS COUNTY

Love Pet. Co.'s No. 1 Interior Lbr. Co., Sec. 2-5n-1e, 90 ft. W, 270 ft. N, SE cor. SW..... Derrick.
Millsaps College's No. 1 fee, Sec. 34-6n-1e, 2,225 ft. N, 1,412 ft. W, SE cor. Sec. ..... Drlg. 2,411 ft.

RANKIN COUNTY

Jas. Alexander, tr.'s No. 1 Hurst, Sec. 12-5n-1e, 200 ft. N, 700 ft. W, SE cor. NE NE..... Rigging up.
Anderson et al's No. 1 Brown, Sec. 12-5n-1e, 166 ft. E, 788 ft. S of C, Sec. ..... Completed for 25,000,000 ft. gas 2,402 ft.
Anderson et al's No. 1 Casey & Wellon, Sec. 11-5n-1e, 656 ft. N and W, SE cor. Sec. ..... Drlg. 175 ft.
Baker-Owens et al's No. 1 Gulf State Creosoting Co., Sec. 12-5n-1e, 94 ft. E, 1,300 ft. N of SW cor. ..... Drlg. plug 2,388 ft.
Cummins & Montgomery's No. 1 Ivey, Sec. 13-5n-1e, NE Lot 10, Blk. D, E. Jackson Pl., First Addn. .... Derrick pattern.
Meredith et al's No. 1 Strowder, Sec. 12-5n-1e, SE cor. SW NE ..... Derrick.
Pioneer O. & G. Co.'s No. 1 Green, Sec. 12-5n-1e, 180 ft. W, SE cor. SW SW..... Bailing 2,413 ft.

Pioneer O. & G. Co.'s No. 1 C. M. Motor, Sec. 12-5n-1e, 937 ft. N and E, SW cor. Sec. ..... Completed estimated 35,000,000 ft. gas 2,422 ft.

WILDCAT OPERATIONS IN MISSISSIPPI

CLARKE COUNTY

Company, farm and location— Remarks:

Gulf Ref. Co.'s No. 1-A Long Bell Lbr. Co., C SW SW, Sec. 10-2n-16w ..... Drlg. 4,716 ft. (corrected).

HINDS COUNTY

Atkins et al's No. 1 Crane Lawrence, Sec. 23-6n-1e, 300 ft. E, 132 ft. N, SW cor. NE SE..... Derrick.
Consumers O. & G. Co.'s No. 1 Interior Lbr. Co., 805 ft. E, 205 ft. N, SW cor., Sec. 1-5n-1e..... Set 10-in. 751 ft.
Howard Oil Co.'s No. 1 Jackson College, C NW NW, Sec. 9-5-1e ..... S.D. 340 ft.
Ridgeway & McGehee, Inc.'s No. 1 Mosal, Sec. 24-6n-1e, 200 ft. N, 100 ft. E, SW cor. of E½ SW..... Sidetracking 2,180 ft.
Rusell O. & G. Co.'s No. 1 Dreyfuss, 650 ft. N, 480 ft. W, SE cor. NE, Sec. 4-5n-1e..... Derrick (corrected).
Southern Pet. Co.'s No. 1 Wilson (was Tri-State O. & G. Co.'s), 320 ft. E, 240 ft. N, SW cor. SE NE, Sec. 25-6-1e ..... Waiting orders 2,498 ft.
F. E. Stewart et al's No. 1 Miss. Cotton Seed Products Co., Sec. 4-5n-1e, 320 ft. S, 440 ft. W, NE cor. SE... Derrick.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keyes, C NW NE, Sec. 2-12-9 ..... S.D. 2,951 ft.

LOWNDES COUNTY

Lowndes County Oil & Dev. Co.'s No. 1 Carr est., Sec. 34-17-16e, 1,320 ft. E, 330 ft. S, NW cor. Sec. ..... Derrick.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19..... S.D. 2,015 ft.
McAlpine et al's No. 1 Cowart, second hole, Sec. 2-12-19. T.A. 3,793 ft.

NEWTON COUNTY

Bob Dalton's No. 1 Majure, 400 ft. N, 300 ft. E, SW cor. SE, Sec. 25-6n-11e..... S.D. 840 ft.

NOXUBEE COUNTY

Thompson & Donohue's No. 1 Donohue, Sec. 25-16n-17e.. Tested hole full alkali wtr. 1,735 ft.

RANKIN COUNTY

Attkisson & Dyer's No. 1 Valentour, 200 ft. S, 200 ft. E, NW cor., Sec. 18-5n-2e..... Waiting on csg. 2,428 ft.
Gulf Ref. Co.'s No. 1-A Hanna, Sec. 33-6n-1e..... Coring 3,342 ft.
Majestic O. & G. Co.'s No. 1 Elton Lbr. Co., Sec. 10-4n-3e. Derrick.

SCOTT COUNTY

M. U. Culley et al's No. 1 Owens, Sec. 2-8-9..... Derrick.

WARREN COUNTY

Eagle Bend O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-2..... S.D. 2,607 ft.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 30)

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE, Sec. 32-9-16 ..... Drlg. 5,891 ft; top Wilcox 5,443 ft.; top Siliceous 5,680 ft.

MURRAY COUNTY

Capitol Prod. Co.'s No. 1 Cutchall, SE NE, Sec. 6-1-2.... S.D. 2,425 ft.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE, Sec. 21-11-19... S.D. 1,011 ft.

OKFUSKEE COUNTY

Shepard et al's No. 1 Nevesa, SE NW SW, Sec. 3-12-10.. S.D. 3,638-90 ft.; Wilcox sand; hole full water.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-11-3w ..... S.D. 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW, Sec. 17-11-3w ..... S.D. 5,515 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW, Sec. 6-20-5 ..... S.D. 1,950 ft.
Cochran et al's No. 1 Green, NE cor. SW, Sec. 15-23-5.. Rig.

PITTSBURG COUNTY

Tape Oil Co.'s No. 1 Fulton, SE, Sec. 34-7-14 ..... S.D. 1,200 ft.
J. Morrison's No. 1 Fowler, NE SE, Sec. 13-7-17 ..... Rig.
C. Kennedy's No. 1 Travis, C SW NE, Sec. 15-7-14 ..... Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 ... . Rig.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW, Sec. 23-12-24w..... C.O. 5,150 ft.
L. C. Hivick's No. 1 Davis, C NW NE, Sec. 4-11-26w... S.D. 3,275 ft.

SEQUOYAH COUNTY

Braman Oil Co.'s No. 1 Unknown, C NW SW, Sec. 29-12-23 ..... T.D. 1,365 ft.; S. D.

WAGONER COUNTY

J. A. Barbee's No. 1 Childers, CWL NW SW, Sec. 28-18-17 ..... S.D. 875 ft.

WASHITA COUNTY

Miley Pet. Co.'s No. 1 Wolfe, NE SW, Sec. 23-9-17w..... Location.
Cooper & Terhune's No. 1 Blocker, NW cor., Sec. 29-8-19w ..... Drlg. 2,740 ft.; show oil 2,459-67 ft.; S.D. 2,757 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 .....S.D. 1,140 ft.

OKLAHOMA PANHANDLE

TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW, Sec. 11-1-1E. T.D. 4,720 ft.; to cement.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Morris et al's No. 1 Mansell, SW NW NW, Sec. 9-2s-12.. S.D. 285 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE, Sec. 18-3s-10 ..... Landed 10-in. at 1,530 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW, Sec. 7-7-10. T.D. 650 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 ..... T.D. 740 ft.; plugged back to 450-80 ft.
Whalem et al's No. 1 Mason, NW SE SW, Sec. 24-6s-9... Drlg. 590 ft.

CHOCTAW COUNTY

Hobson Bros.' No. 1 McChristian, NW NE NE, Sec. 12-8s-19 ..... S.D. 730 ft.

JEFFERSON COUNTY

Smith's No. 1 McCarty, SE NW NE, Sec. 18-4s-8w ..... Location.

LOVE COUNTY

Schemerhorn et al's No. 1 Bourland, NE NW SW, Sec. 1-6s-1 ..... Spudding.
Van Vleck's No. 1 Sheldon, NE SE NW, Sec. 14-8s-24.... S.D. 2,060 ft.
Autrey et al's No. 2 Cross, CWL SE NE, Sec. 27-6s-2.... Show oil and gas 970-72 ft. and 1,324-34 ft.; S.D. 1,651 ft.

MARSHALL COUNTY

Everette et al's No. 1 Agres, SE NE, Sec. 14-7s-6 .. ....S.D. 1,170 ft.
Summers-Sellers' No. 1 Beams, NE SW NE SW, Sec. 20-7s-5 ..... Rig.
Newman et al's No. 1 Henry, NW cor. Sec. 22-7s-6..... Rig.

McCURTAIN COUNTY

Prassell et al's No. 1 Wagoner, SE NE, Sec. 5-8s-27 .... S.D. 150 ft.
Stampfs et al's No. 1 Harris, SW NW SW, Sec. 14-9s-25.. S.D. 1,950 ft.
Stewart's No. 1 Patterson, C SE SE. Sec. 7-6s-24.... ...Fishing 900 ft.

PUSHMATAHA COUNTY

Whitehead et al's No. 1 Messer, SE SW SW, Sec. 35-3s-18 ..... Drlg. 500 ft.

STEPHENS COUNTY

Brown's No. 1 Hightower, SW SE NE, Sec. 15-3s-5w..... Sand 990-1,004 ft.; S.O.; S.D.
George's No. 1 Ryan, NW SW NE, Sec. 31-3-15 ..... Drlg. 110 ft.

CANADIAN FIELDS

(Continued from Page 40)

Pacific's No. 2, and west of Merland's No. 1, also a good producer. Mar-Jon's No. 1 is reported preparing to resume after cementing 12½-inch casing in the lower Benton at 2,850 feet. The 16-inch was cemented at 1,170 feet.

South Turner Valley

In the main South Turner Valley area drilling is now limited to the Mercury tract. In this area, Hylo Oils' No. 1, LSD 12, Section 4-19-2w5, is drilling in the Kootenay formation below 5,400 feet. This test entered the Blairmore at 3,330 feet, set 10¾-inch casing at 3,985 feet, and 8⅝-inch at 5,087 feet. The Dalhousie was entered at 5,150 feet. Crude oil was encountered in fair commercial quantities in the Home sand below 4,955 feet, and while drilling the well has been swabbing an average of 95 bbls. a day of 39.8 gravity crude. This is an exceptional crude production for the upper sands, and has stimulated interest as to what the deep lime may disclose.

In the same general area, Miracle Oils' No. 3, LSD 11, Section 4-19-2w5, is drilling below 5,512 feet, after getting the lime at 5,480 feet. It is planned to set casing in the lime around 5,545 feet. The test cemented 15½-inch casing at 146 feet and 13⅜-inch casing at 1,935 feet; it entered the Blairmore formation at 2,410 feet and the Dalhousie sand at 5,040 feet.

Central Turner Valley

In the Central Turner Valley, McLeod Oil Co.'s No. 1, LSD 16, Section 1-20-3w5, is cleaning out and deepening in the lime below 3,945 feet. This is one of the pioneer crude naphtha producers, having been carried to the lime horizon in 1926. It started with a fairly good crude naphtha recovery, but a string of tools was lost in the hole when the well came in, and production has been shut off for some time. The test originally got the lime at 3,846 feet and cemented 6¼-inch casing in the top of the lime. A bailer, lodged at 3,700 feet, has been removed, and cleaning out has released considerable wet gas, and efforts are now being made to drill past the lost tools.

In the same section, Regent Oil Co.'s No. 3, LSD 16, which is being finished by W. E. McLeod and Hugh Walsh, is reported running two tours and preparing to resume in the Madison lime at 3,812 feet, where 8⅝-inch casing is cemented. McLeod-Walsh Syndicate took over the test in November. The 10¾-inch casing was set at 2,450 feet, and the drill entered the Home sand at 3,190 feet, got the Dalhousie at 3,520 feet with a show of oil and gas, and entered the lime at 3,800 feet. This well was one of three tests started in LSD 16. Section 1-20-3w5, by the Regent Oil Co. headed by D. A. MacDonald of Vancouver. No. 1 got a small production in the deep lime. Nos. 2 and 3 were discontinued.

Farther south, Dome Oil Co.'s No. 2, LSD 16, Section 36-19-3w5, looks like a rather small producer. The test is reported bottoming at 5,612 feet, but is now cleaning out at 5,375 feet in an effort to increase the wet gas flow. The log shows 8⅝-inch casing set at 4,900 feet. The drill got the lime at 5,152 feet and 6⅝-inch was set at 5,155 feet. A string of tools was sidetracked at 5,310 feet and drilling continued to 5,612 feet without increasing the wet gas flow. This was estimated at 1,000,000 feet, but a shot of 320 quarts between 5,290 and 5,420 feet increased it to about 3,000,000 feet, a production test indicating 11 bbls. a day crude naphtha recovery.

North Turner Valley

In the North Turner Valley, United Oils' No. 4, LSD 2, Section 24-20-3w5, is reported bottoming at 6,390 feet, and efforts are being made to finish the well as a light crude producer from the Dalhousie sand. The test has been drilling for several years, intermittently, and at one time took a small light crude production from this horizon. The drill entered the Home sand at 4,830 feet and landed 8⅝-inch at 5,180 feet; the Dalhousie sand was entered at 5,480 feet and 6⅝-inch cemented in the lime at 5,910 feet. The lime was entered at a reported depth of 5,894 feet. No commercial production of gas or naphtha was encountered while drilling in the lime and eventually the drill passed into what was thought to be a recurrence of the Benton shale at 6,250 feet. In pulling the 6⅝-inch, the casing parted and the drillers are now working to get it out, after which some good oil shows encountered in the Dalhousie will be shot.

Drilling Restriction Imposed

The latest development in the way of restriction of drilling and production in the Turner Valley Field is a government order prohibiting the drilling of any new tests to the dolomitic limestone within the proven area of Turner Valley. The order is effective December 1, and the areas covered include the following: Sections 27, 28, 33 and 34, Township 18-2w5; Sections 3, 4, 5, 8, 9, 16, 17, 19, 20, 21, 29, 30, 31 and 32, Township 2-19w5; Sections 25 and 36, Township 19-3w5; Sections 6, 7 and 18, Township 20-2w5; Sections 1, 11, 12, 13, 14, 23, 22, 23, 24, 26, 27, 33, 34 and 35, Township 20-3w5, and Sections 2, 3 and 4, Township 21-3w5.

Wells may still be drilled to any oil-bearing formation overlying the dolomitic or Madison limestone, but must not enter the lime. Explaining the order, R. G. Reid, minister of mines, said: "It is part of the government campaign to stop wastage. As a matter of fact, this regulation has been in effect for some time, but it was only in the past week than an order-in-council in regard to the ruling was passed. The regulation will stop a good portion of the waste in drilling."

According to a statement of W. Calder, director of petroleum and natural gas resources, the order in council does not apply to wells now being drilled; but no new well with the crude naphtha horizon as its objective may be started. The status of wells started some years ago and which have been standing at considerable depth for months and even years has not been authoritatively determined.

D. Austin Lane, secretary of the Oil and Gas Association of Alberta, has issued the following statement: "If the order had made it necessary for companies to get a permit to drill to the lime, there would not have been much objection, but an absolute prohibition against drilling into the limestone is most objectionable. The future of Turner Valley rests in determining the gas reserves, and these reserves cannot be determined without other wells being drilled. For an adequate test, it is imperative that more wells be drilled in the north and south ends of the valley, as well as on the west fold. Also there is a good chance of obtaining more gas at a deeper level than that from which gas is now being obtained. A certain company planned some time ago to drill a 10,000-foot well and plans were dropped only when all this talk about overproduction developed."

Some question has also been raised as to the power of the provincial government to restrict drilling on leases obtained from the federal government before the transfer of natural resources to the province, which became effective October 1, 1930. Practically all the leases in the Turner Valley sections covered by the prohibition were either secured from the Dominion government prior to the transfer, or from various private interests which owned the mineral rights. It is possible that the legal questions involved may be tested in the courts.

Twin River Test

On the Twin River structure, southern Alberta, Parco Oil Co.'s No. 1, LSD 16, Sect'on 34-1-20w4, is reported cemented back from 4,100 feet to shut off a heavy water flow encountered in the Madison lime between 3,905 and 3,938 feet. The hole is reported full of fluid, principally water, from this horizon. When the water shut off is successfully completed, a production test will be made of the oil horizon in the top of the lime. The log shows that the test entered the Blairmore at 3,060 feet, and cemented 10¾-inch casing to protect the hole at 3,544

feet. A lime band was encountered between 3,765 and 3,785 feet. The Ellis did not contain either oil, gas or water; and a slight show of water in the Sunburst sand between 3,670 and 3,675 feet was eventually shut off by cementing 8⅝-inch at 3,855 feet. The drill entered the Madison lime at 3,838 feet when a gas flow, estimated 500,000 feet, was struck: the first crude oil show was at 3,870 feet, or 12 feet in the lime. The drill was eventually carried 242 feet into the lime without encountering further oil shows. The crude tested 31.5 gravity and is reported to have bailed at the rate of 125 bbls. a day. The sand may be shot if production test is unsatisfactory.

Border Fields

On the Milk River structure, Commonwealth Petroleums' No. 1, LSD 8, Section 9-3-15w4, is moving in rotary outfit after drilling to 5,095 feet with cable tools. Sheldon Burden Co. have the contract for deepening the hole, and drilling will resume early this month. The test entered the Madison lime at 2,750 feet, set 6⅝-inch at 3,463 feet, and got a gas show in the Madison at 3,580 feet. The Devonian was entered at 3,840 feet and the drill is still in that formation. The 4½-inch was set at 4,472 feet to shut off water from 4,450 feet and other horizons in the lime; but salt water was later met at 4,780 and 4,850 feet and is standing 4,000 feet in the hole. Production has been looked for in a break near the bottom of the Devonian.

On the Lethbridge structure, Texas-Imperial's No. 1, LSD 14, Section 22-8-22w4, is reported drilling below 4,409 feet, and apparently still in the Ellis which was entered at 4,345 feet. The log shows water at 1,790 feet, the drill entering the Colorado at 1,825 feet, and getting more water at the Colorado-Blairmore contact at 3,700 feet. Water was shut off by cementing 10¾-inch at 3,834 feet. The drill entered the Sunburst sand at 4,303 feet and recently set 8⅝-inch in the Ellis around 4,385 feet to shut off caving and a small salt water show from the Sunburst between 4,314 and 4,319 feet. The test is getting fairly close to the horizon in which Parco's No. 1 and Hudson's Bay's No. 1 Keho encountered their best oil showings.

East of Coutts, Mayland Southern's No. 1, LSD 13, Section 4-1-9w4, on the Reserve Dome structure, is shut down for the winter owing to shortage of water and road conditions. Drilling will resume in the spring at 2,750 feet, at which depth the test was in the basal Blairmore-Kootenay horizon. A checkup of the log shows the last water at 380 feet. The drill entered the Colorado at 560 feet and 12½-inch casing was set at 1,791 feet. The Blairmore-Kootenay was entered at 2,280 feet and the Sunburst sand of this horizon at 2,590 feet, with a dry gas flow estimated at 4,000,000 feet a day from 2,592 feet. Gas was also met at 1,807 and 2,180 feet, and the aggregate flow is, according to careful estimates, around 10,000,000 feet a day, indicating a new gas field of some importance. At 2,730 feet the test was carrying 10¾-inch casing.

Hudson's Bay Test

On the Keho Lake structure, Hudson's Bay Oil & Gas Co.'s No. 1 Keho, LSD 2, Section 7-11-22w4, has met some success with a difficult fishing job at 4,926 feet. The log shows that the drill entered the Blairmore-Kootenay at 4,195 feet, the 10¾-inch being set at 4,222 feet. Some 30 bbls. a day of salty sulphur water was met in the Sunburst. The Ellis was entered at 4,790 feet and the Madison lime at 4,914 feet, the water from the Sunburst being shut off by cementing 8⅝-inch casing at 4,917 feet. The test had previously got two shows, aggregating around 50 to 60 bbls. a day of high grade crude in the Benton shale between 3,680 and 3,776 feet; and a further strong show of 33 gravity crude was met 6 feet in the Madison at 4,920 feet, with approximately 750,000 feet of gas. This oil looked like a fair commercial production. In preparing for production test the tools jammed in the hole. The stem and jars have since been recovered, after a small shot, and the crew is preparing to pull part of the 8⅝-inch and sidetrack the remaining casing and the bit.

Tests in the Foothills

On the Monarch structure, northwest of Calgary, Cartier-Majestic's No. 1, LSD 3, Section 36-31-7w5, is reported drilling in soft gray shale below 1,080 feet. Shows of water were met at 140 and 158 feet after 21½-inch casing was set at 108 feet. A small show of oil was unofficially reported at 1,060 feet.

On the Pincher Creek structure, Weymarn Petroleums' No. 2, LSD 5, Section 7-6-1w5, is reported cleaning out a considerable caving at 3,875 feet. The test previously bottomed at 4,040 feet. The test entered the Fernie shales at 1,150 feet with the Dalhousie sand between 1,860 and 2,000 feet. A flow of slightly wet gas, estimated at 3,000,000 feet a day, was met in this horizon. The 10¾-inch casing was set at 1,868 feet and the 8⅝-inch cemented at 2,540 feet. A lime band, at first supposed to be the Madison, was encountered at 2,745 feet, but later drilling indicated a recurrence of the shale.

On the Moose Mountain structure, Graystone Petroleums' No. 2 Signal Hill, LSD 9, Section 34-23-5w5, is at 4,224 feet and for about three months has been fishing. The 6⅝-inch was set at 3,300 feet. A show of 45 gravity crude was met at 4,168 feet, but has not been tested, pending the result of deepening into the sand.

On the Fisher Creek structure, Cotton Belt Mines' No. 1, LSD 5, Section 21-21-4w5, is hauling casing. The pipe was secured from the abandoned Algonquin-Commonwealth test in the Ribstone Field. The test is expected to resume drilling early this month at 2,625 feet.

Aldersyde Wildcat

On the High River-Aldersyde structure south of Calgary, Ranchmen's Gas & Oil Co.'s No. 1, LSD 16, Section 13-20-29w4, is reported drilling below 5,290 feet after a short fishing job at 5,260 feet. The outfit is running single tour. The test has been drilling more or less steadily for several years, being financed by High River and Calgary men to determine the possibility of deep production on the "Bird dome," where shallow gas had previously been discovered in small quantities. The 8⅝-inch casing was set at 2,860 feet and the 6⅝-inch at 3,945 feet. A number of small shows of oil and gas have been reported, the chief gas being met in a sand at 4,710 feet and a slight oil show at 5,057 feet. It is claimed the accumulated gas at present would make the well a small commercial producer.

Wainwright Deep Test

In the Wainwright Field, east-central Alberta, Montreal-Alberta Petroleums' No. 1, LSD 2, Section 15-45-7w4, is preparing to resume after running 8⅝-inch casing to 2,620 feet. The 10¾-inch was set at 650 feet. The test failed to get commercial production in the Wainwright sand and is deepening into the lime.

Alberta Oil Production

Official figures of Alberta crude production for November, covering all fields, show a total of 89,361 bbls., compared with 150,352 bbls. for the same month last year. The figures, however, show a nominal increase compared with those for October, 1931, when production reached 89,052 bbls. The comparative figures for the various Alberta pools are as follows:

Pool—	Nov., 1931	Nov., 1930
Turner Valley naphtha ..	80,043	140,128
Turner Valley light crude.	4,059	3,273
Red Coulee light crude...	4,035	6,357
Wainwright heavy crude..	280	594
Ribstone heavy crude	944	.....
Total	89,361	150,352

For the 11 months ending November 30, 1931, the total production from Alberta pools was 1,359,401 bbls. This is approximately the same as last year.

Manitoba Gas Test

In the Manitou district, southwestern Manitoba, Commonwealth Petroleums' No. 2, LSD 2, Section 26-2-9-wPM, is reported preparing to resume at 1,300 feet after a shutdown for the holiday season.

Alberta Oil Regulations

The Oil and Gas Association of Alberta, after careful study of the provincial regulations governing drilling for oil and gas, is submitting to the government a memorandum urging some changes in the regulations. The points urged include more favorable drilling credits, alterations in the regulations regarding the division of leases, and a wider interpretation of the discretionary powers vested in the government.

Test in Saskatchewan

Following geological work and structure testing carried on for several years, the Ardill Oil Co. of Ardill, Saskatchewan, is making arrangements for a commercial test on a location south of Moose Jaw. Drilling equipment is being secured from Calgary and the test will likely spud in this winter or early in the spring. Frank J. Irvine of Regina, Saskatchewan, is actively interested in the venture.

Alberta Recovery Projects

A report recently presented by Dr. E. H. Boomer of the University of Alberta to the Alberta Research Council deals with experiments in connection with tar sands, wet gas and Alberta coal as sources of hydrocarbons. Doctor Boomer's experiments have demonstrated that benzine can be extracted from the Turner Valley gas and the details are now being brought down to a commercial basis. Industrial alcohol is also a potential by-product, but the industry is hardly justified on a commercial scale till larger markets for the product are opened.

Ontario Drilling

In southwestern Ontario, Ralph Dawson's No. 2, SW Lot 3, Concession 15, Tilbury East Township, Kent County, has spudded in and is reported drilling around 400 feet. This is a test for gas in the Tilbury sand. Production will be taken by the Southern Ontario Gas Co.

In the Olga Field, Raleigh Township, Kent County, Olga Oil & Gas Co.'s No. 5 has spudded in. Location is on the Jenner side road, about 1,500 feet north of Olga's No. 4 producer.

In Enniskillen Township, Lambton County, Sarnia Oil & Gas Co.'s deep test on Lot 18, Concession 2, southeast of Oil Springs, is reported still fishing at around 1,380 feet.

PERSIAN OPERATIONS NOW WELL INTEGRATED

Anglo-Persian Oil Co., Ltd., has thoroughly integrated its operations in Persia and is now one of the largest and best equipped single enterprises of its kind in the world.

At the annual meeting of the company held in London some months ago, Sir John Cadman, chairman of the board, made some interesting comparisons with the project today and conditions obtaining in 1913, when he first visited the fields.

At that time, he said, the company was drilling in but a limited area in the Masjid-i-Sulaiman Field, and produced but 80,000 tons for the full year. The famous Asmari horizon had not yet been reached, and efforts were being made to build up the field's production to 500,000 tons per year. The structure was believed to be confined to a few miles, and wells were going down 500 feet apart.

The pipe line from the field was operated by a steam pump at Tembi, which pumped the oil over the Imam Riza Mountains, whence it flowed by gravity to Abadan. The line at that time could handle but 1,000 tons per day and the refinery at Abadan had maximum capacity of 800 tons per day. There was but 47,000 tons of storage at Abadan.

Sir John found an entirely different picture today. The field has been proved 21 miles in length, with the new field of Jaft Kel believed to be of greater distance and potentiality than the discovery area. The company's famous F-7 well, which came in around 50 tons daily, had increased its flow to more than 2,000 tons per day and after yielding 7,000,000 tons had been shut down to conserve gas pressure in the field. Numerous other wells of greater capacity were in production.

The company's pipe line now has daily capacity in excess of 17,000 tons per day, with centrifugal boosting stations all along the line, and storage for more than 2,000,000 tons underground at Abadan. The Abadan refinery is now one of the world's model plants, thoroughly up to date, and with daily capacity of close to 100,000 bbls.

TEXAS PRISON LANDS OPEN TO DEVELOPMENT

AUSTIN, Tex., Jan. 4.—As the first step toward oil development on prison lands, the state board for leasing the prison lands has ordered bids to be called on 2,000 acres of land in the Eastham farm of Houston County. It fixed a minimum of $1 per acre, and provided that drilling shall start within 90 days of execution of a lease.

The prison system reserved one-eighth royalty in the oil. The tract is not near any present oil development, members of the leasing board said.

Legislators who passed the bill for oil development of prison lands visioned a possible rescue of the prison system such as resulted to the University of Texas when oil was found in Reagan County. The university royalties have reached a total of $16,000,000 net above the cost of supervision and checking.

Members of the leasing board are Chairman W. A. Paddock of the prison system, Land Commissioner J. H. Walker and Attorney General James V Allred.

KANSAS FIELDS

(Continued from Page 34)

Counties, the result of recent wildcat discoveries. In Stafford County, Midwest Refining Co.'s No. 11 Figger, C NE NE, Section 1-23-12w, will offset the same company's discovery well, No. 1 Richardson, which has a potential of 1,680 bbls. a day. Same company has staked a location for No. 8 Brock, NW cor., Section 6-23-11w. The company's No. 29 Allen, C SW SW, Section 31-22-11w, has cemented 15-inch casing at 155 feet. The company numbers its well according to the location in the section instead of progressively.

In Barton County, Midwest Refining Co.'s No. 1 Berscheidt, C NW SE, Section 12-20-11w, is a location offsetting the discovery well, Hilligoss and others' No. 1 Isern, which made 1,100 bbls. a day. The Derby Oil Co.'s No. 1 Berscheidt, another offset to the discovery well, was drilling at 2,600 feet.

In Cowley County

New tests are starting on the townsite of Winfield in Cowley County, including W. M. McKabb's No. 1, Lot 2, Block 2, Section 22-32-4, in the Highland Park Addition. The new deep pay is found in the northern part of the townsite where several old gas wells have been drilled to the Silicious lime. New tests in the townsite of Winfield are now drilled under permits from the city. Konx Drilling Co.'s No. 1 in Lot 11, Block 44, Musgrove Addition, is a new location.

General Drilling Activity

Kansas is one of the active areas in the Mid-Continent district from a development standpoint. A survey as of December 30 indicates that the State has 152 operations. Of these, 30 were rigs, 70 tests were actually drilling and 52 tests were shut down. Thirty-nine counties reported operations. The most active include McPherson County with 39 operations, Sedgwick County with 16, Cowley County with 19 and Greenwood with 12. The others were scattered over the State.

The future possibilities in the central western part of the State are believed to be bright along the Barton Arch in Stafford, Rice, Barton and Ellsworth Counties. The area today extends approximately 66 miles long from north to south under the four counties and the adjacent territory is expected to yield several pools.

The territory known as the Barton Arch has been in the process of development for approximately five years but was not considered important until the last two years, when the discovery well

was drilled in the Schurr Pool, in Rice County. Most of the areas are represented by one producing well, with the exception of the Schurr Pool, which has 12 completed wells. Development has been delayed by limited outlet. The area was a considerable distance from any of the major pipe line systems and the wells were forced to shut in and await a pipe line connection. During the last month the majority of these wells were being connected. The Stanolind Crude Oil Purchasing Co. has been extending its facilities to the various areas, thereby providing the first outlet to these wells. On the extreme edges are a number of producing pools, the Gorham and Fairport Pools, in Russell County, and the Welch Pool, in southeastern Rice County, which have little if anything to do with the development of the Siliceous lime area along the Barton Arch. The new development along the Barton Arch produces from the Siliceous lime, a formation lying on top of the granite mountain. A similar condition exists at El Dorado and Augusta Pools, which also produced chiefly from the Siliceous lime on a granite ridge.

Some express the opinion the area on the south of the district is considered possible oil territory and within the next few years wildcat tests will cover a large part of the area.

Butler County

Flint Hill O. & G. Co.'s No. 2 Martin, CWL SW NE, Section 27-28-4, has been shut in for 500,000 feet of gas in sand at 1,515-24 feet.

Chase County

Ryan and others' No. 1 Morris, C NE NW, Section 5-19-7, is dry and abandoned at 1,288 feet.

Coffey County

Aikman & Young made location for No. 1 Strickland, NW cor. SW SW, Section 14-22-13.

Cowley County

Lewis Production Co.'s No. 1 Peringer, SW cor. NE NW, Section 20-31-6, is dry and abandoned at 2,949 feet. Knox Drilling Co.'s No. 1 Mattison, Lot 8, Block 44, Musgrove addition to the city of Winfield, Section 22-32-4, has been deepened from 2,975 feet to Siliceous lime at 3,311-18 feet and completed for 150 bbls.

Greenwood County

Simmons and The Texas Company's No. 1 Bullion, SW cor. SE, Section 22-23-11, is rigging up. Gore and Phillips Petroleum Co.'s No. 1 Brothers, NW cor. NE NW, Section 35-23-11, is rigging up.

McPherson County

Deitrick, Kiskadden and Stanolind Oil & Gas Co.'s No. 1 Kelly, NW cor. SW NW, Section 34-19-1w, is a rig on the ground. Carey and The Texas Company made location for No. 2 Holt, SE cor. Section 13-19-2w. Youker and others staked location for No. 2 Gratton, NE cor. NW SW, Section 24-19-2w. Lario Oil Co. and Shell Petroleum Corp. made location for No. 2 Gratton, NW cor. NE SW, Section 24-19-2w. Lario Oil Co. and Shell Petroleum Corp. staked location for No. 2 Boal, SW cor. SE NW, Section 24-19-2w. Gypsy Oil Co.'s No. 1 Lovett, SE cor. SW NW, Section 24-19-2w, is a location. Darby Petroleum Corp.'s No. 2 Fletcher "A", SE cor. SW SW, Section 16-19-1w, has been completed for 34,512,565 feet of gas in chat 2,913-61 feet. Reserve Oil Co. and Shell Petroleum Corp.'s No. 2 Ritz, SW cor. Section 31-19-1w, topped Viola lime at 3,405 feet, drilled to 3,427 feet and pumped 977 bbls.

Rice County

Magnolia Petroleum Co. made location for No. 1 Boyer, SW cor. NW, Section 7-20-10w. Rogers and others' No. 2 Rainey, SW cor. NW SE, Section 3-21-6w, has been completed for 1,200 bbls. in chat 3,378-98 feet, total depth 3,405 feet.

Russell County

Brennan and others' No. 1 Waly, C SE NW, Section 29-13-11w, is a rig.

Sedgwick County

Continental Oil Co. has the rig on the ground for No. 1 Brown, NW cor SW, Section 15-25-1. No. 1 Smith, NE cor. SE, Section 16-25-1, is also a rig on the ground. Continental & Gypsy Oil Co.'s No. 1 Land, SE cor. NW, Section 12-26-1w, is a rig. No. 1 Bishop, NW cor. NE, Section 13-26-1w, is also a rig. Continental Oil Co.'s No. 2 Goodrich, NW cor. NE SW, Section 16-25-1, has been deepened from 3,038 feet to 3,340 feet and pumped 605 bbls.

LA.-ARK. FIELDS

(Continued from Page 33)

the week. Arkansas showed the greatest increase, 680 bbls., despite the fact that the Urbana Field declined 450 bbls. in its daily runs. This was due to the reopening of a good number of wells in the Smackover Field, which have recently been closed on account of high water. The daily average runs from the several pools are:

NORTH LOUISIANA	
Caddo light	5,940
Caddo heavy	1,690
Cotton Valley	510
DeSoto and Red River	2,100
Elm Grove	340
Haynesville	4,460
Holly	345
Homer	2,830
Pleasant Hill	360
Sarepta-Carterville	790
Urania	3,335
Zwolle	5,090
Total	27,790
Total previous week	27,535
Increase	255
ARKANSAS	
Champagnolle	1,985
El Dorado	3,165
Lisbon	570
Nevada	1,110
Smackover light	3,000
Smackover heavy	22,950
Stephens	640
Urbana	300
Total	33,720
Total previous week	33,040
Increase	680
Total both states	61,510
Total previous week	60,575
Increase	935

CENTRAL WEST FIELDS

(Continued from Page 41)

is drilling No. 3 Rajah Ognett farm, Section 22, Columbia Township.

In Pike County, H. A. Moore's second test, 320 feet from the south line and 1,200 feet from the west line of the Harley Craig farm, NE Section 19, Washington Township, is reported as a 1,000,000-foot gas producer, the gas being found from 1,682-90 feet. Charles L. Diver and others' No. 1 Glendora Robling farm, Section 24, Logan Township, same county, drilled deeper and produced 70 bbls. the first 24 hours.

Ross and others' test, 600 feet from the north line and 300 feet from the west line of the Ross farm, NW Section 23, Veale Township, was dry at a depth of 1,420 feet.

ILLINOIS

No completions were reported from any part of Illinois, but quite a number of wells were pulled out and abandoned in the Dupo area of Sugar Loaf Township, St. Clair County, and southeast of East St. Louis. In this field the Kansas-Illinois Drilling Co. abandoned No. 1 Laura J. Miller farm, SE Section 21. Stinson & Henray did the same with No. 1 G. W. Ludwig lot, same section. Ostos Pogue pulled out No. 1 C. F. Mason, Lot 21. C. C. Roques and others abandoned No. 1 Earl Proper lot. Majestic Oil & Gas Co.'s No. 1 Peter Kurtz lot, same section, and L. C. Blackman and others' No. 1 John Shult lot, same section, were also abandoned. Same parties also abandoned No. 1 on the Dyson Lumber & Hardware lots, NE Section 28, same township. Ohio Oil Co. pulled out No. 1 Joseph Reichert, NW Section 3, same township. T. W. Stehlin abandoned No. 1 Lucy Carr, SE Section 21.

Webster Oil & Gas Co. is drilling on the G. Harms farm, Section 23, Columbia Township, Monroe County.

KENTUCKY

Two good gas wells were reported from the Madisonville Field in Hopkins County, the United Petroleum Co.'s Nos. 1 and 2 near the town of Crofton. No. 1 is rated at 2,500,000 feet and No. 2 at 3,000,000 feet, exceptional wells for Kentucky.

In Ohio County, the Penn-Indiana Oil Co.'s No. 22 on the C. A. Kelley 260-acre farm, in the Kelley Pool, is reported good for 25 bbls. from the shallow pay at 451½ feet. Cumberland Petroleum Co.'s No. 2 on the A. E. McCarty 85 acres, in the Haynesville Pool, is reported a duster.

In Daviess County the Mecca Oil Co.'s No. 3 on the J. C. and M. Alsip 50 acres, in the Jones Pool, had an initial of 80 bbls. at 730 feet. Evans & Garrison's No. 1 William Hibnek farm, was a dry hole. Harry Russell and others are drilling No. 2 Widow Tanner farm, east of Whitesville and Cox and others are drilling No. 3 Charles Bell farm, in the Jones Pool, west of Whitesville.

Ohio Oil Co. is drilling No. 1 W. E. Lynn farm, in the Calhoun Field of McLean County.

EASTERN FIELDS

(Continued from Page 41)

fair completions. In Sherman district, the Pure Oil Co. completed No. 54 on the Federal Coal Co. tract, showing for a fair gas well. In the same district Godfrey L. Cabot completed No. 50 on his lease on the Federal Coal Co. property in the Berea sand and it is good for 750,000 feet a day. In this section the same operator completed a second test on the Q. Dickinson farm, also in the Berea sand. It is a very fair gas well showing for over 1,500,000 feet a day.

Completions in other districts were small. In Lincoln County Pridemore and Adkins completed a second test on the M. Miller and R. Topper lease in Jefferson district. It was drilled to 2,453 feet and will make a small gas well. In Logan County, Estep, Bland and others drilled a test on the George C. Baker farm in Chapmansville district. It is a light gas well, there being not enough gas to test in a 2-inch opening.

In Marshall County, the Carnegie Natural Gas Co. drilled a second test on the T. O. Johnson farm in Liberty district. It reached 3,175 feet and will make a fair gas well for this district. In Putnam County the United Fuel Gas Co. deepened an old test well on the J. H. Bird farm in Curry district. No gas was found in the Berea sand and the well was plugged back to the Big Injun sand, from which formation it will make a gas well. In Wayne County the Wayne United Gas Co. completed No. 40 on the A. W. Wilson heirs farm in Lincoln district. It will make a small gas well from 3,084 feet.

Drilling in West Virginia

Activities in Roane and Calhoun Counties which have been fairly busy all summer are now quieting down. There are still 11 wells drilling. In Roane County the deep test of the United Fuel Gas Co. on the J. W. Hinzman farm is shut down at 8,770 feet for a sand line. This deep test is in Curtis district. In the same district, W. B. Heeter remains shut down at 917 feet in his second test on the Robert Knopp farm and is testing the oil in that formation. In this district the Reedy Oil & Gas Co. has reached 1,290 feet in a fourth well on the L. M. Riddle farm. In Spencer district, the Ohio Valley Gas Corp. is working to get No. 15 on the R. M. Jennings farm started. In the same district, George Smith and others rigged up to start spudding a test on the C. A. Kendall farm, and J. P. Young and others have a rig standing on the Dan Connally farm. In Reedy district the Heck Oil Co. has the material on the ground for No. 5 on the H. W. Allen farm.

In Calhoun County, Harley Ferrall and others have started drilling a test on the W. H. Wood farm in Lee district and is down 425 feet. In the same district Ed Hess and others have a third well on the John Evans farm down to 2,065 feet and it is about due in the Injun sand. In this district, F. F. McIntosh is shut down at 550 feet, John Riddle farm, and has the material on the ground for a fourth well on the Fox-Morgan farm, and has taken a location on the Carr Shaffer farm. In Washington district, Holly Jarvis and others is drilling on the Hoke Jarvis farm and is down 550 feet, and has made a location on the L. H. Crookshank farm. In Center district, Creed Barker and others are drilling at 200 feet on the Hattie D. Hathaway farm. In the same district L. S. Ayers and others have reached 1,875 feet on the Laura E. Kerby farm. Walter Bickerstaff and others have shut down their test on the John W. Haddox farm at 1,350 feet for a sand line. In this district, W. H. Bickel has a rig standing for a second test on the George D. Starkey farm, and Godfrey L. Cabot has made a location on the Scott Umstead farm. In Sheridan district, the Conservation Oil & Gas Co. has a rig standing for a second test on the James Kerby farm.

In Lincoln County, the Campbell Drilling Co. has a test on the A. W. Wilery and Thomas P. McMellon farm in Sheridan district drilling at 1,160 feet. In the same district, the Martin Gas Co. has reached 1,835 feet on the Settie Hager farm. H. H. Dial is rigging up a drilling machine on the Claude Peyton farm in Sheridan district, and the Kanawha Gas & Utilities Co. is also rigging up on the Nona Johnson farm. In Union district, the Woodyall Gas Co. is moving in a drilling machine for a second test on the Charlie Honaker farm. In Jefferson district, the Cambridge Gas Co. has spudded in a second test on the A. M. Mullens farm, and the United Fuel Gas Co. has a rig standing for a second well on the Courtney Land Co. tract.

SOUTHWEST PENNSYLVANIA

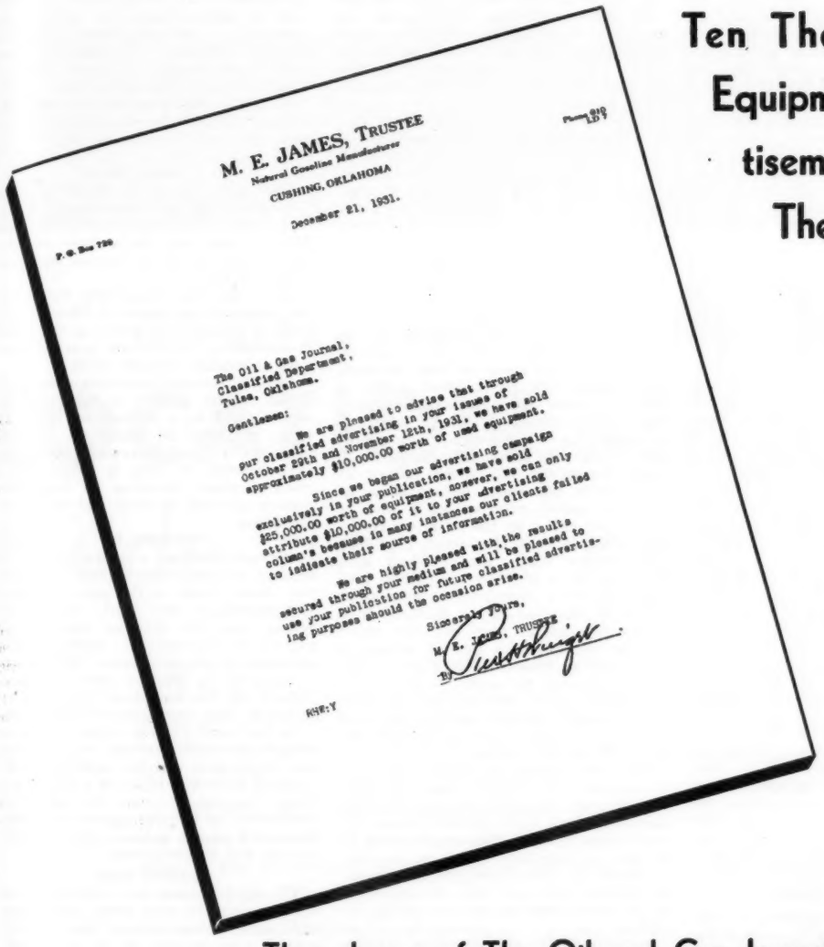
The test of the Carnegie Natural Gas Co. on the H. B. Brownlee farm in East Finley Township, Washington County, which was reported as a 3,000,000-foot gasser and which came in blowing the string of tools out of the hole as soon as the Gordon sand was tapped, proved a disappointment as a gas well. A Gordon gasser in this section is unusual and this test was no exception. The gas proved to be from a tight pocket which was soon exhausted. The test was then drilled deeper and into the Fourth sand, and the well is now showing for about 10 bbls. a day from that formation. On an adjoining farm, the Asbury Stout, the Natural Gas Co. of West Virginia completed No. 3 as a fair gas well.

Other sections of Southwest Pennsylvania remained quiet. In Whitely Township, Greene County, the Equitable Gas Co. is down 2,990 feet on the M. Crago farm, and has a test on the Olive B. Stephens farm, same township, standing at 2,780 feet. In Dunkard Township, this company is down 1,260 feet on the Lena Brower farm. In the same township, the Shidler Johnson Co. is drilling deeper its test on the Myrtle Sterling farm.

DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

		—Month of November—		—11 months ending Nov.—	
		1930	1931	1930	1931
Petroleum, crude	Bbls.	1,765,205	2,449,215	22,365,495	24,464,457
Petroleum, crude	$	1,968,715	2,133,790	30,620,067	19,877,406
Total refined petroleum	Bbls.	7,185,836	7,631,575	113,327,503	85,520,370
Total refined petroleum	$	24,085,500	17,854,302	411,537,672	218,925,082
Gasoline, naphtha and other light products	Bbls.	3,546,845	3,422,904	58,970,387	41,246,542
	$	12,380,012	8,338,368	236,919,254	103,399,842
Oils, illuminating	Bbls.	977,795	1,205,685	15,379,493	11,983,923
Oils, illuminating	$	3,509,062	2,947,937	58,368,715	33,071,753
Gas and fuel	Bbls.	1,862,368	2,068,209	29,689,891	24,877,633
Gas and fuel	$	2,020,126	1,776,366	30,643,762	22,589,947
Lubricating	Bbls.	788,563	638,043	9,144,070	7,405,366
Lubricating	$	6,047,488	4,724,455	83,644,206	58,709,858
Other refined petroleum	Bbls.	10,265	3,734	143,662	96,916
Other refined petroleum	$	128,812	67,176	1,961,735	1,154,582
Paraffin wax	Lbs.	28,408,543	30,576,254	265,312,056	251,825,225
Paraffin wax	$	763,786	816,129	9,628,047	7,384,155

Another convincing proof of valuable reader interest!



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Eastern Market Expects Better Times

First Quarter of New Year Likely to Witness Sustained Movement Toward Further Cutting Down of Refinery Runs

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Jan. 4.—The turn of the year has brought a more optimistic feeling in East Coast refined products circles, and while the developments of the closing week of 1931 were far from constructive and the outlook for the first quarter of 1932 is tinged with uncertainty, market sentiment shows a decided change for the better.

Progress achieved in curtailing production of crude petroleum through Sunday shutdowns in the Southwest is regarded as definitely constructive by eastern oil circles. The failure of the refining branch of the industry, on the other hand, to make the expected progress in cutting down inventories, particularly of gasoline, is cause for concern, and it is expected that the first quarter of 1932 will witness a sustained movement on the part of leading refining interests toward further cutting down of refinery runs and resultant production of products.

While informed sentiment in eastern trade circles does not incline to the view that the industry is "out of the woods" yet, it is believed that a definite start has been made in the right direction, and that a continuance of co-operative efforts during 1932, with additional operating economies, promises a more equitable return in all branches of the industry.

The first half of 1932 is expected to witness refinery activity, the general trend toward higher octane number gasoline being responsible for many refinery improvement plans in process of formulation during the past few months. Many refiners had been holding these plans in abeyance, believing that the plan for the establishment of a second grade of Ethyl gasoline would make unnecessary the installation of improved cracking equipment to produce an unblended motor fuel of higher octane number.

Export Situation

Export operators are viewing the outlook for the new year with some concern. Intensified competition from both Russia and Rumania cut sharply into expected export totals of United States refined products during 1931, and present indications are that there will be no substantial amelioration of this condition during the year just getting under way. In addition to the stronger competition afforded by these two countries in foreign markets, there has been considerable new refinery construction abroad during the past year, with further developments along this line scheduled for 1932 and 1933, all of which presages a greater degree of independence of United States petroleum products on the part of the many world markets formerly drawing a large percentage of their petroleum requirements from this country.

Refinery Gasoline

The spot market appeared to have stiffened somewhat during the past week, although still far from strong, and prices were unchanged at 6 to 6½ cents per gallon for U. S. Motor of 65 octane number and higher, and 5¾ to 6 cents per gallon for U. S. Motor below 65 octane number, both quotations applying to gasoline in tank car lots, f.o.b. refinery terminals.

Sentiment regarding the immediate outlook of the gasoline market appeared evenly divided. Some interests were inclined to look for a continuance of present price levels for the next few weeks, while others held that a half cent cut in posted prices was essential to restore the market to a stable basis. The cut in crude production, however, has exercised a strengthening influence upon the entire market position, and the belief that present gasoline quotations can be maintained appears to be gaining more adherents.

There has been a well-sustained movement into consuming channels during the week, favorable weather over the holidays making for heavy gasoline consumption. Jobbers, who had been holding off the market in anticipation of a cut in posted prices, were taking stocks in larger volume last week and were showing more of a disposition to keep their storage full to take care of current needs.

Demand for premium motor fuels at the refineries has increased materially in recent weeks, and refiners look for a material expansion in consumption of the higher antiknock product during the coming year. A pronounced trend toward high compression engines is evidenced in the 1932 models of leading makes of automobiles, and these cars will be turned over to motorists with the advice to use the best grades of premium gasoline in their operation. Predictions in refining circles indicate that the ratio of premium gasoline sales to total gasoline gallonage during 1932 will establish a new high record.

Stocks of gasoline at East Coast bulk terminals on December 26 totaled 6,883,000 bbls., against 6,596,000 bbls. on hand at the close of the previous week and 7,096,000 bbls. similarly held on December 27, 1930. There were 1,634,000 bbls. of gasoline "in transit" for East Coast bulk terminals as of December 26, against 1,912,000 bbls. at the close of the preceding week and 1,742,000 bbls. as of the same date in 1930. Total stocks of gasoline at bulk terminals east of California amounted to 11,140,000 bbls. on December 26, a slight decrease from the total of 11,243,000 bbls. similarly held at the close of the preceding week, but a substantial increase over the 10,233,000 bbls. on hand December 27, 1930.

Tank Wagon Gasoline

With large marketers showing a willingness to meet cut-price competition wherever it develops, there has been less inclination on the part of independent marketers to endeavor to stimulate retail sales through the medium of cut prices, and the tank wagon and service station price structure, in consequence, is on firmer ground.

There were no general price revisions in the tank wagon gasoline market during the week, although a number of minor revisions have been made at scattered points in the territory to bring the general market into line.

Gallonage held up extremely well throughout the week, the unusually favorable weather, combined with the year-end holidays, making for a sharp increase in consumption.

Marketers operating in New York State are apprehensive over the tax situation here. Leaders in the state legislature are talking an increase of 1 or 2 cents per gallon in the current tax rate on gasoline sales, and it is expected that the proposed increase will be put through without any difficulty at the 1932 session of the legislature.

Kerosene

Continued cold weather has made for heavy kerosene consumption and the East Coast refinery market for this product has been strong and active. Tank car deliveries have shown a sudden spurt, and there is some talk in market circles of a half-cent mark-up in the posted quotation. Leading refiners, however, continue to post 6 cents per gallon for 41-43 water white. With the market undertone strong and tending upwards, jobbers are keeping their storage full and in addition generally have a car or so "rolling" for replacement as soon as they move out burning oil from their bulk plants.

The situation in the tank wagon division of the kerosene market parallels the refinery market. Deliveries were reported as exceptionally heavy during the week under review, and prices were strongly held in all quarters. Kerosene once again presents the unusual picture of a higher retail market for burning oil than for motor gasoline, and judging from present indications, this situation will obtain for some time to come.

Lubs

Another break has developed in the cylinder oil market, and spot quotations were lowered all along the line this week, in keeping with the reduced prices at which refiners are now accepting business. Spot quotations, for cylinder oils in barrels, f.o.b. Bayonne, are now quoted as follows: 600 steam refined, 19 to 20 cents per gallon, 635 steam refined 21 to 22 cents, 650 steam refined 22 to 23 cents per gallon, representing declines of 1 cent per gallon on the first two grades and 1½ cents on the latter. Spot 600 Pennsylvania flash was one-half cent lower at 24 to 25 cents per gallon, with 630 flash off a corresponding amount at 27 to 28 cents per gallon. Reductions of 1 cent per gallon were put into effect on the other grades quoted, prices of which are as follows: 600 Warren "E," 22½ to 23 cents per gallon; 600 Oil City "E," 21½ to 22 cents per gallon; light bright stocks, 140-150, 29 to 30 cents per gallon; dark bright stocks, 140-150, 28 to 29 cents a gallon.

Notwithstanding the latest price cuts in cylinder oils, which bring the spot market under the high level for the year, demand showed little activity during the week under review. This was believed to be due not only to a desire on the part of buyers to hold down their year-end inventories, but to a lack of confidence in the price structure of the market as well.

Industrial oils showed little activity during the week, although prices were without change for the period.

Fuel Oil

The spot market for bunker "C" oil closes the year unchanged at 60 cents per barrel, with leading refiners reporting the market steady at that figure. Some weeks ago it appeared that a 10-cent advance was pending on bunker oil quotations, but fresh irregularity and uncertainty in the crude oil market worked against a higher price for fuel oil, and the expected price increase failed to materialize.

There was a well-sustained demand for bunker oil during the week with contract deliveries holding up well for the period. Refiners have booked a substantial gallonage for 1932, and considerable contract business is also on the books for 1933. The price outlook for fuel oil is still uncertain as the new year gets under way, but it is believed here that any constructive developments in the crude petroleum situation will be almost immediately mirrored in the fuel oil price at principal domestic ports.

Gas Oil

The market has weakened further, and although leading refiners are quoting 28-30 oil in tank car lots at 4 cents per gallon, considerable business has been done at 3½ cents, and the actual range on spot transactions is closer to 3½ to 3¾ cents per gallon than to the "official" posted quotation of 4 cents.

Industrial consumers were drawing gas oil stocks in fair volume during the week, and the industry goes into the new year with all of the important utility consumers covered on the bulk of their year's requirements by term contracts, although some consumers have covered their anticipated requirements only partially, and plan to supplement contract deliveries with purchases in the spot market.

Diesel Oil

The posted price for 28-30 Diesel oil is unaltered at $1.30 per barrel, in bulk, f.o.b. refinery terminals in the New York Harbor area, and the market has been only moderately active during the period under review.

As is the case with other heavy oils, the principal consumers of Diesel oil are covered by term contracts on their 1932 requirements, with some contract business stretching through 1933.

Leading refiners have apparently abandoned, for the present at least, their reported plans for a 10-cent per barrel advance in Diesel oil quotations, although an upward price movement during the first quarter of 1932 is looked for if crude markets continue to hold their present position, or show any change for the better.

Heating Oil

Refiners reported a sharp increase in demand for domestic heating oil during the closing week of the year, and tank car movement was fairly heavy. The posted price for this oil, minimum 32 gravity, is 3½ cents per gallon in tank car lots at the refineries. This is one division of the market where gallonage figures for the full year 1931 are expected to show increases over 1930 totals.

In the retail division of the heating oil market, continued activity was reported, and prices were without quotable change. Leading marketers reported a heavy tank wagon movement during the week, and predictions as to gallonage for the 1931-32 heating season indicate that new high records will be established.

Paraffin Wax

The spot market was virtually stagnant during the past week, and quotations were without change. Domestic consumers were largely out of the market, pending the completion of year-end inventories, and only hand-to-mouth replacement buying is indicated for the first quarter of the new year. Export inquiry, however, had shown a little stimulus, and operators were looking for more buying of both crude scale and fully refined for shipment abroad.

While quotations on spot wax were unchanged during the week, the market undertone had sagged further, and it would have been possible to shade quoted prices fractionally on all melting points on a firm bid for any appreciable quantity of prompt shipment wax.

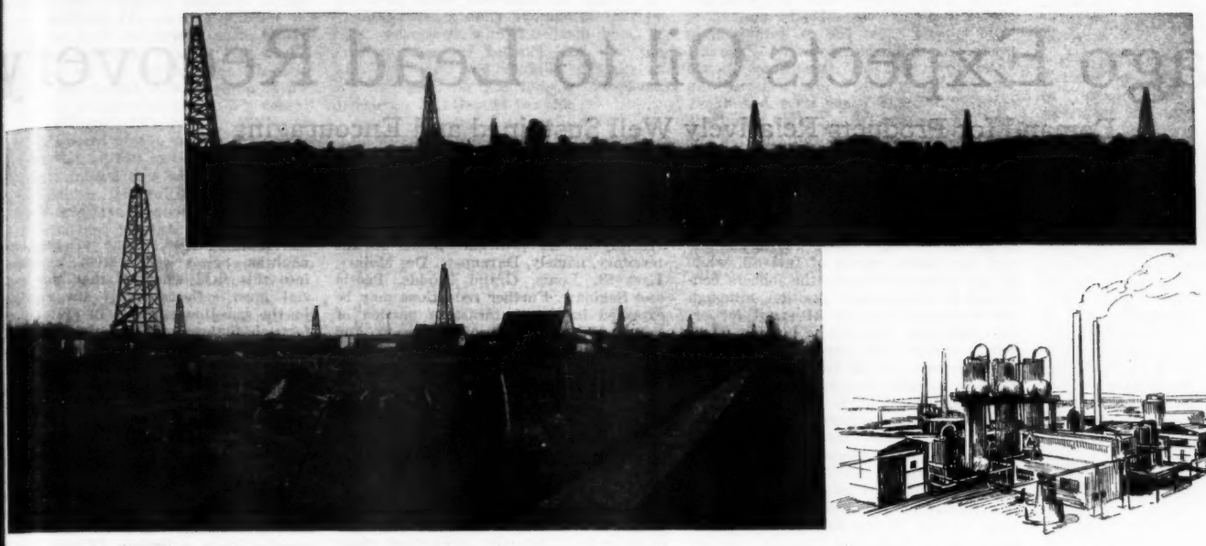
Export Market

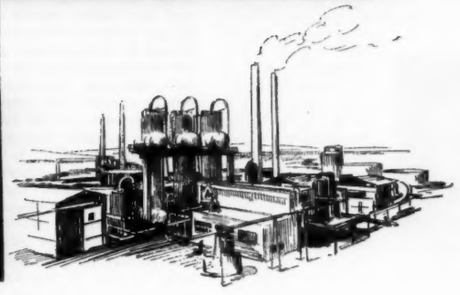
Several cargoes of Venezuelan crude were contracted during the week, for shipment to Europe during the first half of 1932, at a reported price of 78 cents per barrel, f.o.b. tidewater point Venezuela. Some additional business in Mexican crude was also reported closed during the week, although details surrounding these transactions were lacking.

There were no export cargoes reported closed at the week, and little inquiry was reported. Buyers who were in the market during the early part of December have apparently placed their business at Constanza, or in Russia. Export gasoline quotations were unchanged at the Gulf.

Export kerosene continues to move in

(Continued on Page 65)





available . . . **A REFINERY LOCATION** *with plenty of good crude and a rich local market*

MOUNT PLEASANT is in the center of Michigan's Oil Field, and in this area there are approximately 225 wells having an open flow capacity of 30,000 barrels a day. This crude is a good 42 gravity paraffin base oil, easy to refine.

The opportunity now exists for additional refinery facilities and Mount Pleasant invites the attention of the nation's refiners. The city assures its willingness to cooperate in securing a plant site.

It is a natural and ideal choice of location . . . a proven and rapidly developing field, strategically located to supply the vast potential market of the mid-west's automotive centers.

Within one hundred miles of Mount Pleasant (not including the Detroit area) are eleven industrial cities with a combined population of 821,166, having 1,449 manufacturing plants with an annual payroll of more than $220,000,000.

Michigan, the home of the automotive industry, has in itself a motor vehicle registration of 1,328,209.

The pipeline tariff on Mid-Continent crude is 67c a barrel at Chicago. Consider the advantage of location in the center of this desirable field, with the elimination of high transportation charges, and with crude at 55c a barrel, the local posted price.

Correspondence invited. Address the Secretary, Chamber of Commerce, Mount Pleasant, Michigan.

MOUNT PLEASANT

CHAMBER OF COMMERCE

Mt. Pleasant Michigan

Chicago Expects Oil to Lead Recovery

Demand for Products Relatively Well Sustained and Encouraging Progress Made in Meeting Difficulties Caused by Oversupply

By Robert C. Conine
Chicago Bureau, The Oil and Gas Journal, 6 North Michigan Ave.

CHICAGO, Jan. 4.—As the new year opens there is the satisfying reflection in Chicago district oil trade circles that practically all of the depressing portents have a purely psychological foundation, whereas the cheering elements are based on activities now under way or announced for this week. Several leaders of the industry, whose opinions and predictions are regarded as masterpieces of circumspect expression, are announcing publicly their belief that the oil business is destined to lead the other lines of commerce out of depression before many months have passed. To quote the president of one of the largest petroleum interests in the territory, "We have learned much from the experience of the last two years and have ceased to look upon the 1929 conditions as normal. We have, therefore, settled down to dealing with conditions as we find them, and I see in the oil industry indications that improvement may take place ahead of improvement in general business. The demand for products has been relatively well sustained, and difficulties caused by oversupply, although continued, are being met with encouraging progress."

W. T. Holliday, president and general manager of the Standard Oil Co. of Ohio, as vice president for marketing of the American Petroleum Institute, has called a meeting of the Institute's marketing committee for Thursday in Chicago. The business to be discussed at this conference has not been announced, but the fact that it is to be held is serving to reassure marketers here that the leaders have no intention of "sitting back" and letting events take their course, come what may.

Tax Evasion War Spreads

Frank V. Martinek, assistant vice president of the Standard Oil Co. of Indiana and chairman of the first gasoline tax evasion committee in the country, is leaving for New York City today to confer with eastern oil company executives for the purpose of organizing seven states into the northeastern area or district of the projected nationwide campaign against gasoline tax evaders. Attending this conference besides Mr. Holliday will be Judge Amos L. Beaty, president of the American Petroleum Institute; Frederick Ewing, vice president, Standard Oil Co. of New York; W. V. Hartman, vice president, Gulf Refining Co., and W. J. Filer, vice president, Shell Eastern Petroleum Co. Mr. Ewing will be chairman of the district committee. The states making up this area are Connecticut, Massachusetts, Maine, New Hampshire, New York, Vermont and Rhode Island.

Buyers have been taking advantage of the last few days of grace before the 1 cent per 100 pounds freight advance, scheduled to go into effect today. The sudden pickup in instructions to refiners has revealed encouraging facts. One East Texas refiner has given notice that he will be unable to take care of current instructions before late next week and states that an unexpected rush of buying activity has left him 126 cars behind. One of the larger marketers in Chicago reported that buyers who ordered out gas oil last week to anticipate the .06-cent per gallon freight increase, did so in lots of as much as 100 cars. Most of the activity thus brought about was in gas oils and the lighter grades of fuel oil, while in the gasoline business the jobbers continued to hold a wary position, although the increasing number of small lot orders indicates that stocks held by these sellers explain why stocks at refineries have moved up in the face of lower crude oil runs to stills and lessened production of cracked gasoline. It is the prevailing belief here that refiners have not yet taken into account the attitude of the distributors and jobbers which reveals a distinct partiality for "hand to mouth" buying at any price as long as the price still figures on the declining side. However, as soon as the fear of a crude oil price cut is eliminated from the present scheme of things, buyers are expected to take an active position in the markets, with plenty of room for action afforded by extremely low stocks in storage at their bulk plants.

Refiners Refusing to Shade Prices

Several refiners in the district who have permitted the reading of telegraphed replies to buyers are providing a strong indication that the contended low of 2½ cents on U. S. Motor gasoline of no octane specifications is much less an actuality than last week. While it is reported that one large refiner, selling through a broker in Chicago, is making it possible for the trade to buy at as low as 2⅜ cents, the refiners above mentioned are refusing to sell even for resale at 2½ cents. One such refiner said Saturday that he was prepared to sell his crude oil, of which there is a surplus of about 50,000 bbls. due to curtailment of crude runs to stills, rather than entertain offers made by marketers at this time. One refiner, whose sales were cut at least 150 cars of gasoline a month by Rumanian imports to Detroit, and who has been one of the chief sufferers from the influx of distress gasoline in the district, said that he will not move U. S. Motor material at a price below the equivalent of 2¾ cents to the trade.

It is stated on good authority that the condition of several Mid-Continent refiners who have been a threat to the refined products markets has been relieved by the appearance of large buying orders from other refiners. The long delay this time in the arrival of the "rescue act" is expected to serve as a deterrent to those zealous operators who during the past year have shown such poor memory. Today the indications were that the distress gasoline which had been hanging over the markets for a month is now out of the way, and that the surplus material is in most cases in the hands of interests able and willing to wait for a fair return on their investments. Those few who are not willing to "give the markets a chance" are earning for themselves a bad will among their conferers which bodes ill for the future. The refiners, it is generally pointed out, have now had a good opportunity to study a marketing situation without parallel in the industry's history, and after the disappearance of a saving phenomenal demand. Up to now, it is said, the failure of refiners as well as crude oil producers to gauge demand and understand the attitude of the buyers may have been excusable, but from now on the warning is clear that unless operations are brought down sharply the industry will find its ranks greatly thinned and weakened.

Ambiguous Tank Wagon Situation

While it is stated on reliable authority that the tank wagon gasoline markets in the territory are in no danger of being reduced in a general cut, activity of price cutters has brought on reductions recently in six principal points in the territory, namely, Davenport, Des Moines, East St. Louis, Grand Rapids, Peoria and Saginaw. Further reductions may be expected in the southeastern portion of South Dakota, western Minnesota and northwestern Nebraska due to a 1-cent cut, effective January 1, announced for all of the WNAX stations. The headquarters of this group of price cutting station is in Yangkton, S. Dak., and it is asserted that the number of gasoline service stations listed under this group is close to 400.

It is interesting to note that one of the major marketers in the territory is carrying on an extensive advertising campaign to boost the sales of its third grade gasoline. The notices state that this gasoline has been improved considerably and will give the motor car owner satisfactory performance at a price 2.5 cents below that of the regular grade. One of the major marketers which has refused to sell the third grade gasoline at its stations outside of St. Louis, Shell Petroleum Corp., is preparing to introduce the third grade motor fuel at its stations in Chicago.

Will Serve to Steady Position

The improvement of the third grade gasoline, which has been expected since the trade began to take up the matter of octane number ratings seriously, it is believed, will serve to move the regular grade material into a steadier position with the cheaper grade carrying the brunt of attacks by price cutters throughout the territory. The fact that expected price wars, following the gasoline tank car market decline, have failed to materialize in the old hot beds such as St. Louis, Detroit, Chicago, Minneapolis, Milwaukee and Indianapolis, augurs well for the retail situation. It is also to be remembered that price cutters elsewhere in the territory have not waited long to seek a price advance after the major companies have followed their reductions. In Chicago, where the prices posted by the trackage stations are practically on a par with those of the major marketers, it is not felt that the situation in regard to price cutting activities has been improved. In fact, it is felt that the practices of giving away premiums in lieu of lower prices is the worse of the two evils and puts the more conscientious marketers, who are mindful of the code of marketing practices of the American Petroleum Institute, at a disadvantage. The larger companies have moved to meet this type of competition with their third grade price cut of 1 cent, but even a price of 2½ cents below that of the regular is hardly felt to be an adequate bid for this gallonage.

Other Products Show Strength

The damp, cold weather which has effectually cut short a brief spell of good gasoline consumption, has naturally had the reverse effect upon the gas oil and fuel oil markets. The turn in the weather, coupled with the desire of buyers to order out material before the freight rate increase should go into effect, has arrested the slight easiness which was creeping into these markets and given them a better tone. For that matter, a better undertone is also evident in the gasoline markets, where it is generally believed that the bottom has been reached and that the higher prices in the range are representative of the larger volume of business. Kerosene, due to the apparent scarcity of the material, is strong at current prices. It is understood that the cold weather has brought an increase in natural gasoline inquiries, and in the naphtha markets it has become evident that the end of a long gradual decline has been reached. Some of the lower naphtha prices come from newcomers into this field who feel that this material must reflect exactly the condition in the gasoline markets in spite of the fact that these naphthas may be considered special cuts which are often the "heart" of the gasoline.

There has been a noticeable increase in open market buying, mostly in small amounts. The distributors and jobbers are still holding to their policy of buying only for immediate needs. While the distress gasoline which has for about a month depressed the markets has been absorbed, the activities of certain Mid-Continent refiners who are bent on increasing their gallonage at any cost is working a hardship on Chicago marketers who feel that the time is ripe for tank car advances, but are restrained from seeking a fair profit by this class of competition.

Premiums on Antiknock Grade

In the daily price quotations published in Chicago the differentiation in regard to octane ratings is now being made on the 60-62 gravity, 400 endpoint gasoline as well as on the U. S. Motor specifications material and with the same ranges. However, although only half a cent separates the price of the "no octane specifications" 400 endpoint gasoline from that of the same material of "65 and up octane," most sellers of the antiknock grade have been found to be asking a premium of three-quarters of a cent to a cent, and point out that the retailer is justified in asking at least 2 cents premium at his stations.

There were no further declines Monday from the lows of last week, but the range in the U. S. Motor and the 400 endpoint gasolines was narrowed somewhat. Prices were steady in the higher tests. According to present indications there is good grounds for believing that buyers will soon begin to take material off the hands of the refiners and that the good work will be helped along by a rising market. Provided, of course, the figures released this week on gasoline stocks and runs to stills do not frighten the buyers. The 58-60 U. S. Motor gasoline is quoted at 2½ to 2¾ cents, with most of the business above the low in spite of reported shading of that figure. The 60-62 400 endpoint gasoline is bringing 3 cents with some sales of 2¾ cents reported for material without pretense of antiknock quality. The 64-66 375 endpoint gasoline is quoted at 3½ to 3¾ cents, representing a narrowing down from the top of a quarter of a cent, while the 68-70 360 endpoint material remains unchanged at 3⅞ to 4⅛ cents. The 50-52 450 endpoint naphtha is quoted without change at 2½ to 2¾ cents, as is the blended motor fuel at 2⅞ to 3⅛ cents.

Naphtha Tank Car Markets

Dealers handling naphthas for the trade are reported to be unusually slow in submitting contracts for this year's business. This is taken as an indication that these sellers are looking for an improved market outlook which will give them an opportunity to make more acceptable contracts. These contracts in many cases guarantee the current spot market quotations as the top, with benefit of all declines. One of the major companies, however, stipulates that the declines must be initiated by itself. The naphtha markets are at the bottom of a gradual decline and are momentarily expected to pick up, and this explains the hesitation of sellers at this time, especially in view of the fact that in the

naphthas the contract business represents practically the entire volume.

Naphtha tank car prices, basis Group 3, Monday continued firm at last week's levels and with a better tone. Cleaners naphtha, 200 initial, 320 endpoint, of 56-58 gravity, is quoted at 5½ to 5¾ cents; lacquer diluent, 180 initial, 250 endpoint, is quoted at 8¼ to 8¾ cents, and the material of 140 initial and 200 endpoint is a quarter to a half a cent higher. Rubber solvent, 100 initial, 300 endpoint, of 68-70 gravity, is quoted at 5½ to 6 cents. Stoddard solvent, 300 initial and 410 endpoint (flash over 100 degrees) shows the widest range with quotations varying from 4¾ to 6⅝ cents. Petroleum thinner, 200-300 initial, 415 endpoint (flash over 83 degrees) is quoted at 4¼ to 4½ cents. V.M.&P. naphtha, 56-58 gravity, 190-200 initial and 330 endpoint, is offered at 5⅛ to 5½ cents. Petroleum spirits, 280 initial and 425 endpoint, is quoted at 3⅝ to 4½ cents.

Kerosene Tank Car Markets

The kerosene tank car markets continue strong at recently advanced prices of 2⅜ to 2½ cents for the 41-43 water white material, and 2½ to 2¾ cents for the 42-44 water white kerosene. Prime white distillate is said to be in demand at a low of 1⅞ cents.

The fuel oil and gas oil tank car markets have taken on a better appearance in the district with the arrival of chilly winds and snow. The heavier fuel oils show no improvement, however. Prices Monday were: For the 18-22 fuel oil, 22½ to 27½ cents; for the 22-26 fuel oil, 30 to 37½ cents; for the 28-30 fuel oil, zero, 50 to 60 cents; for 32-36 industrial gas oil, 1¼ to 1½ cents; for 32-36 zero gas oil, 1¾ to 1⅞ cents; and for 38-40 straw distillate, 1⅞ to 2⅛ cents.

EXPECT BETTER TIMES IN EASTERN MARKET

(Continued from Page 62)

good volume, although no cargoes were reported closed at the week. While quoted prices remained unchanged, sellers were showing firmer price views, and were talking an eighth-cent advance on water white.

Petroleum Exports

There were a number of small increases in export shipments of refined products from New York during the week ended December 26, although volume continued confined to routine quotations on all products.

The following table shows refined petroleum products from the local port for the past three weeks (all figures in gallons unless otherwise specified):

	Week ended		
	Dec. 26	Dec. 19	Dec. 12
Gasoline	127,000	45,000	150,000
Naphtha	595,000	125,000	181,000
Kerosene	110,000	50,000	250,000
Fuel oil	50,000	5,000	9,000
Lub oil	791,000	525,000	1,787,000
Pet., refined	480,000	905,000	400,000
	Pounds		
Paraffin wax	1,975,000	1,500,000	6,660,000
Refined	1,149,000		35,000
Scale	15,000	880,000	595,000
Lub grease	760,000	590,000	1,620,000

There was some increase in export inquiry during the past week and traders here were looking for an improved volume of spot business during the early part of January, this being based largely on the fact that recent shipments have been below normal. The outlook for the year 1932, however, is rather bearish. Rumanian, Russian and other competition has tended to steadily diminish export sales of both bulk and cased products from the New York market during the past few years, and a continuance of this situation, together with the steadily growing expansion of refining facilities in foreign markets formerly dependent upon the United States for refined products, will naturally tend to further restrict the export volume which might logically be expected to be placed locally. The Gulf market is experiencing the same development.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended December 26, totaled 1,314,000 bbls., a daily average of 187,714 bbls., compared with 1,046,000 bbls., a daily average of 149,429 bbls. for the four weeks ended December 26. Details follow:

(Barrels of 42 gallons)

At Atlantic Coast Ports—	Bbls.
Baltimore	114,000
Boston	65,000
New York	664,000
Philadelphia	202,000
Others	208,000
Total	1,253,000
Daily average	179,000
At Gulf Coast Ports—	
Galveston district	61,000
Total	61,000
Daily average	8,714
At All United States Ports—	
Total	1,314,000
Daily average	187,714
Daily average four weeks	195,500

Distribution of total imports is as follows:

	Bbls.
Crude	807,000
Gasoline	189,000
Fuel oil	318,000

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended December 26 totaled 170,000 bbls., a daily average of 24,286 bbls., compared with 243,000 bbls., a daily average of 34,714 bbls. for the previous week, and a daily average of 33,464 bbls. for the four weeks ended December 26. Details follow:

(Barrels of 42 gallons)

At Atlantic Coast Ports—	Bbls.
Baltimore	98,000
Others	72,000
Total	170,000
Daily average	24,286
At Gulf Coast Ports—	
All ports	none
At Atlantic and Gulf Coast Ports—	
Total	170,000
Daily average	24,286
Daily average four weeks	33,464

All of the week's receipts of California oil consisted of gasoline.

Shipments of California refined products for Atlantic Coast ports during the week were as follows:

For Philadelphia: 114,400 bbls. of gasoline on the Eastern Sun and 116,200 bbls. of gasoline on the Sun.

For Bayonne: 81,000 bbls. of gasoline on the Agwiworld.

For Seawaren, N. J.: 79,000 bbls. of gasoline on the Thomas H. Wheeler.

For Fall River, Mass.: 90,000 bbls. of gasoline on the Livingston Roe.

Charter Market

Continued quiet prevailed in the tank car charter market during the past week, so far as fixtures indicating any revival in American petroleum exports were concerned.

Fixtures reported during the week were as follows:

Steamer British Star (British) 4,080 tons net, part cago crude coal tar, Atlantic Range to French Atlantic, p. t., January loading.

Steamer British Lantern (British) 4,076 tons net, crude coal tar, Atlantic Range to French Atlantic, p. t., January loading.

Motorship Anna Knudsen (Norwegian) 12,500 tons, whale oil, one round Antarctic trip on time charter, 4/-, delivery Europe, prompt.

Motorship Carpena (Italian) 6,800 tons, clean, Constanza to U.K./Continent, 7/-, January loading.

Steamer Pegasus or Socony (British) 4,500 tons, clean, Constanza to Cette, 37.50 francs, January loading.

NORTH AND WEST TEXAS

(Continued from Page 27)

No. 1 Overall, dry and abandoned, total depth 1,003 feet.

Young County

Degener & Co.'s No. 1 Foster, dry and abandoned, total depth 496 feet. H. A. Fonville's No. 1 Finch, dry and abandoned, total depth 764 feet. W. H. Hammon's No. 4 Jeffery, oil sand 750-61 feet, initial production 79 bbls., total depth 762 feet. King Royalty Co.'s No. 33 Larimore, oil sand 673-81 feet, initial production 10 bbls., total depth 717 feet, plugged back to 685 feet. George Mollenkoph's No. 1 Jeffery, dry and abandoned, total depth 800 feet. Simmons and Lively's No. 1 Newman, dry and abandoned, total depth 542 feet. United Producers Co.'s No. 3 Larimore, oil sand 692-97 feet, initial production 292 bbls. in 24 hours, total depth 697 feet.

NORTH TEXAS PRODUCTION

Panhandle district—	Bbls.
Carson County	4,691
Gray County	32,149
Hutchinson County	10,889
Moore County	1,364
Potter County	...
Wheeler County	273
Total production this week	49,366
Total production last week	51,494
Decrease	2,128
Wichita Falls district—	
Archer County	11,254
Baylor County	515
Clay County	556
Cooke County	1,700
Foard County	64
Haskell County	23
Jack County	1,827
Montague County	3,992
Throckmorton County	465
Wichita County	15,724
Wilbarger County	9,998
Young County	10,270
Total production this week	56,388
Total production last week	61,050
Decrease	4,662
Ranger district—	
Brown County	3,757
Callahan County	1,456
Coleman County	2,732
Comanche County	687
Palo Pinto County	326
Eastland County	2,571
Shackelford County	3,263
Stephens County	3,915
Total production this week	17,707
Total production last week	17,910
Decrease	203

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Texoma Natural Gas Co.'s No. 3 Schaffer, initial production 55,000,000 feet of gas, total depth 2,531 feet.

Gray County

Anderson-Bean's No. 2 Vallmert, top pay 3,175 feet, shot 230 quarts from 3,195-3,265 feet, initial production 280 bbls., total depth 3,265 feet. Kewanee Oil & Gas Co.'s No. 5 Smith, top pay 3,195 feet, shot 210 quarts from 3,195-3,220 feet, initial production 363 bbls., total depth 3,273 feet. Parton Holt and Shell Petroleum Corp.'s No. 1 Morse, top pay 2,387 feet, initial production 85 bbls. oil and 4,000,000 feet of gas, total depth 2,397 feet.

Moore County

Texoma Natural Gas Co.'s No. 3 Coon, initial production 8,200,000 feet of gas, total depth 3,140 feet.

DISTRIBUTION REPORT FOR WEST TEXAS

Week Ending December 24

Shipments Through Main Trunk Lines

Company, size and location—	Bbls.
Atlantic P. L. Co., 10-in., Houston	23,007
Gulf P. L. Co., 10-in., Ranger	30,140
Humble P. L. Co., 2-8-in., San Angelo	32,431
Humble P. L. Co., 12-in., Comyn	44,641
Illinois P. L. Co., 2-8-in., Del Rio	24,674
Magnolia P. L. Co., 8-in., DeLeon	7,660
Paso-Tex P. L. Co., 8-in., El Paso	7,755
Shell P. L., 10-in., Cushing, Okla.	31,659
Shell P. L. Corp., 10-in., Houston	18,438
Texas P. L. Co., 12-in., Houston	14,469
Total	234,874

Shipments to Refineries

Burford Ref. Co., Pecos City, Tex.	S.D.
Cosden Ref. Co., Big Spring	5,524
Col-Tex Ref. Co., Colorado City	7,000
Great West Ref. Co., Big Spring	1,640
Continental Ref. Co., Pyote	S.D.
Wickett Ref. Co., Wickett	600
Signal Ref. Co., Texon	S.D.
Howard County Ref. Co., Big Spring	S.D.
Total	14,764

Shipments by Tank Car

Fox and Thorsen from Mertzon	25
Stanolind O. & G. Co. from Wickett	6,233
Total	6,258
Daily average distribution	255,896
Daily average production	174,331
Daily average from storage	42,244

PETER D. BROGAN DIES

CHATHAM, Ontario, Jan. 4.—Peter D. Brogan died recently at Petrolia, aged 67. In his earlier years he was connected with the A. C. Edwards refineries at Petrolia.

DEATH TAKES NOTED PETROLEUM SCIENTIST

Beeby Thompson, noted scientist, specializing in petroleum, died at his home in Northampton, England, on Saturday, December 12, aged 83 years.

More than 30 years ago Mr. Thompson commenced private research on petroleum problems and from the outset he firmly maintained that the origin must be attributable to biochemical rather than geochemical agencies. His love of chemical research led him to make some of the earliest investigations of oil sands, oil field waters and emulsions sent from Russia by his son for the purpose. Emulsions at that time were little understood, and caused the loss of some millions of tons of oil in the Baku oil fields.

During the last 25 years Mr. Thompson undertook geological missions to many countries, including Russia, Rumania, Poland, Peru, Colombia, Ecuador, Trinidad, Jamaica and Southwest Africa.

Mr. Thompson was honored by awards from the Murchaisson fund of the Geological Society and from the British Association for Research in Geology, and was a life member of the Geological and Chemical Societies, the Geologists Association and the British Association for the Advancement of Science.

He was the father of A. Beeby Thompson, geologist and petroleum engineer, who is widely known in the United States.

COLLIER BILL HOPED AS AID TO OIL TARIFF

(Continued from Page 18)

producing petroleum in this country and abroad the exact amount of that difference may still be a cause of discussion because several views of foreign costs were embodied in the commissions' report, thus making necessary representation of the oil industry before the commission to determine what set of facts shall determine the amount of tariff crude and refined oil should receive.

Senator Shortridge of California has again introduced his oil tariff bill and it has again been referred to the Senate committee on commerce of which Senator Johnson of California is chairman. It is similar to his bill of the last session of Congress. Hearings on this bill have not yet been announced.

RESULTS FROM CRACKING LIGHT OIL FRACTIONS

(Continued from Page 22)

the reflux condensate from the fractionating tower.

The heated hydrocarbon material discharges into a vertical reaction chamber maintained under pressure and then passes into the flash chamber, maintained at a lower pressure than the reaction chamber. The vapors leaving the flash chamber pass into the fractionating column, and the endpoint gasoline flows through a water cooled condenser to a receiver. The incondensable gas is scrubbed for its gasoline content, while the cracked gasoline passes to a storage tank. The reflux condensate is discharged to the heating coil by means of a hot oil pump, while blending with the charging stock. The flashed residue is continuously withdrawn from the bottom of the flash chamber and is cooled by means of a water cooling coil before passing to storage.

PROSPECTING NEW FIELD

A number of interests are conducting prospecting operations on Bahrein Island, on the Arabian side of the Gulf of Persia, according to reports from abroad. Favorable surface showings of oil have been encountered at Dschebel Dichan and other places on the island. Standard Oil Co. of California has a concession on the island, registered in Canada under the name Bahrein Petroleum Co., Ltd., and is reported investigating the possibility of production on the island. German and British oil interests also have acreage holdings on Bahrein Island.

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7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
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10 lines	3.50	6.00	8.50	11.00

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Tulsa, Oklahoma

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200 Amp. Lincoln Arc Welded 220/3/60. Practically new. Price $425.00. 100 Amp. Federal Butt Welder; 220 V. 60 cy. Complete. Excellent condition, $500.00. 12"x14" Chicago Pneumatic Air Compressor. $350.00. 46"x18' Niles Lathe. Quick change; $1,250.00. Also, large stock of lathes, shapers, mailing machines. pipe machines, bolt threaders; etc. Send for our list. Terms to suit.
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JAMES E. MILLER CO. will co-operate with responsible firms or parties seeking aid in financing projects of higher order. Suite 200, New Brady Hotel, Tulsa, Okla.

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WANTED—Road Oil Salesman. Must be familiar with use and application of road oils. Previous experience in this kind of selling highly essential. Give all details in first letter together with recent picture and salary expected. Address Box E-900, The Oil and Gas Journal, Tulsa, Okla.

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1043 Pender St., West

SITUATIONS WANTED

YOUNG GEOLOGIST would like to make connection with oil concern. Experience in Production and Marketing both in Texas and Mexico. Address 317 Bewely Building, Fort Worth, Texas.

GRADUATE MINING ENGINEER
11 years' experience geology, land and production departments in Mid-Continent area. Desires permanent connection or part time with privilege of consulting work. Address Box E-832, The Oil and Gas Journal, Tulsa, Okla.

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THE OIL AND GAS JOURNAL
TULSA OKLAHOMA

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PRIVATE SECRETARY and Cost Accountant desires position with oil concern where ability, ambition and originality will be rewarded by promotion. Familiar with refinery, production and marketing operations. Experienced in budget control. Address Box E-901, The Oil and Gas Journal, Tulsa, Okla.

LUBRICATION engineer having business associates in public utilities, municipal power plants, transportation systems and manufacturers in Midwest, desires connection, sales and service. Paul Stuermer, 8153 Harper Ave., Chicago, Ill.

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RANCH land in Texas and New Mexico, 40 acres to 400,000 acres, improved or unimproved, $2 per acre up; cash, terms or trade for business property, stocks or bonds. Amos Poe, Andrews Building, Dallas, Tex.

LEASES—PRODUCTION

EAST TEXAS Woodbine wildcat located on geophysical high; acreage cheap; 50 to 1 gamble. E. Croft, Proctor, Tex.

FOR SALE—Natural gas leases, producing properties, proven territory, West Virginia, Ohio and Kentucky. Geological reports, good markets, low rentals. William J. Snider, Hundred, W. Va.

A COMPANY having excellent holdings in Fort Morgan Oil Fields is open for arrangement for drilling. Same on an oil payment basis. Big Springs Oil & Gas Co., 735 Inca St., Denver, Colo.

UNUSUAL OPPORTUNITIES FOR ROYALTY INVESTORS AND DISTRIBUTORS

THE MERCURY COMPANY
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LAND, the source of all wealth, the only safe investment, all royalty—on structure—new survey adjoining location—oil fields—Oklahoma County—best geology—three 40-acre tracts—one 40 sells in $100 shares. Geo. W. Seckman, Edmond, Okla.

WANTED—To Exchange High Class income property for Producing Royalties. Address Box E-881, The Oil and Gas Journal, Tulsa, Okla.

Royalty; Leases; Drilling Contract. City Field. Big producing area. O. O. Milliken, Box 63, Oklahoma City.

PRODUCING ROYALTIES
Specializing in East Texas
John L. Dickson, Box 1037, Tulsa, Okla.

OIL INDUSTRY MAY TAKE LEAD, PRESIDENT SEUBERT'S OPINION

CHICAGO, Jan. 4.—"There are still some adjustments to be made in the world's economic machinery before it can be set humming again," said Edward G. Seubert, president of the Standard Oil Co. of Indiana. "For this reason the prospect for immediate improvement in general business is not overly bright. But after two years on the downgrade it is certain that business must be somewhere near the bottom. Recovery will follow this depression as it has all other depressions, though the comeback this time may prove long delayed and slow.

"Meanwhile, it is a good state of affairs that industry and business have ceased looking upon the conditions of 1929 as normal conditions, have ceased getting panicky over every troublesome situation, and have settled down to dealing with conditions as they are and making the best of them. We have learned much from the experience of the last two years. And I doubt if there is a two-fisted man in industry who has not obtained actual satisfaction from discovering in himself and his associates, under the stress of storm, capacities which smoother sailing failed to bring out.

"In the oil industry there are some indications that improvement may take place ahead of improvement in general business. The demand for products has been relatively well sustained. Difficulties caused by oversupply have continued, but progress has been made in meeting them. Especially since the discussion of the industry's problems at the recent meeting of the directors of the American Petroleum Institute in St. Louis, producers and refiners have been showing a real disposition to hold their output within reason. Rationalization of production and refining will make other reforms in the industry's affairs possible.

"It is encouraging to the future of marketing conditions that the destructiveness of many practices to which ruthless competition has given rise is today better understood. The dangers of gasoline tax evasion have been discovered, and vigorous steps are being taken to end this cause of damage to the industry and loss to the public treasuries. The industry and the motoring public are also alive to the dangers of mounting gasoline taxes. It is being realized clearly that further increases will result in diminishing returns, will seriously threaten the oil business and will impose unfair burdens upon the motorists who pay the taxes. Public sentiment is turning strongly against such increases.

"In Standard of Indiana operations we are facing conditions as we find them without relying too much on improvement in general business. We are tightening up our organization, carrying out all feasible economies, modernizing our manufacturing activities, and making provisions against such adverse contingencies as we think may develop. We believe that sound business procedure is going to prove its merits as never before under the conditions of 1932."

TO TRIPLE SAKHALIN OUTPUT

The Soviet Naphtha Syndicate has been steadily expanding its producing operations on Sakhalin Island, and crude petroleum production of the island is expected to total 300,000 tons. The program for 1932 calls for production of 900,000 tons, and includes the erection of a refinery at Khabarovsk, to enable the Soviet oil trust to ship refined products to the Far East at a laid down cost considerably under that for oil from Baku and Grozny.

MOTORS AND THEIR FUELS MUST FIT

(Continued from Page 17)

in the amount of piston-swept combustion space devoted to propelling unit weight of car a mile. In other words, the specific displacement has not increased consistently.

It is, however, generally recognized that the average performance of cars has increased over a period of years and an increase has appeared in a higher maximum speed and more get-away at the traffic light. Acceleration of an automobile might be taken as an index of this, and in order to see what the trend has been in this regard, the average acceleration for a large number of cars has also been plotted in Figure 2. This acceleration has been measured in terms of time required to accelerate the car over a relatively low speed range, and, taking the average time in 1927 as unity, the per cent decrease in the time or increase in acceleration has been plotted in Figure 2 as the upper line. Clearly, there has been a great increase in acceleration, amounting to almost 20 per cent over a period of five years.

Viewing the two curves together, there is apparent a definite increase in acceleration without much increase in specific displacement. Looking at it in another way, the tendency has been to get more power out of a given amount of piston-swept combustion space.

There is, however, with conventional engines, a limit to the amount of power obtainable from a definite amount of combustion space. A serious limit is the fuel and more directly the fuel knock, as has been pointed out.

Motor Fuel Trends

Octane numbers of gasolines over a period of years would be quite valuable in showing what has been the fuel trend with respect to knock. Unfortunately, however, the octane number scale is relatively new, and no data are generally available to show the trend over a long period. It is interesting, however, to look at the gasolines in terms of cracking, since many cracked gasolines have fairly good antiknock properties.

Figure 3 indicates the per cent of the total gasoline production made by cracking, and also by straightrun distillation for the period of 1927 to 1930 as computed from the American Petroleum Institute. "Petroleum Facts and Figures." A definite trend upward is seen in the percentage of cracked gasoline. Automobiles of 1930 were running on more cracked gasoline than before.

Another indication of a trend in gasoline may be taken from the increasing sale of premium grade gasolines containing antiknock compounds and sold on a basis of antiknock quality. Over a relatively short period of years the sales of gasoline containing lead tetraethyl have increased from nothing to a very considerable proportion of the total sales of gasoline.

Fuels to Follow the Trend

Fitting the fuel and the engine together for the purpose of getting more power out of the combustion space may become largely a matter of eliminating knock. The engine has a remarkable ability to pick out these fuels which are suited for it; and with those which are not suitable it voices its protests with loud and angry knocks.

The remarkable thing is that the engine makes its selection on the basis of the inner structure of the molecules of which the gasoline is composed, and not on the boiling point or some other relatively simple physical property of the gasoline. Of the paraffin hydrocarbons, for instance, the engine finds an enormous difference (as much as four or five compression ratios) between n-heptane and iso-octane, although both hydrocarbons are composed of about the same amount of carbon and hydrogen and boil at about the same temperature. (It is upon this fact, of course, that the octane number scale of rating fuels is based.) These differences in knock can be correlated with the ways the atoms are linked up in the molecule; and there is thus direct relation between the physics of arrangement of atoms in gasoline molecules, and the way an automobile feels when the driver puts his foot on the accelerator.

The engine finds an enormous difference between gasolines produced by straight distillation of petroleums from different localities. As is well known, some yield gasolines of fairly high octane number and some fuels of very low octane numbers which knock violently in conventional engines. A selection of crudes of the basis of their knocking properties, which is already evident, would seem to be directly involved with the production of gasolines of high octane number.

It does not seem very probable that the geological processes which made the petroleum molecules were especially suited to produce just those types of molecules which fit best into a gasoline engine. As Mr. Kettering has pointed out: Suppose oil wells did not produce fuels for engines, but produced crankshafts instead. Imagine the difficulty of designing engines which would run with them when one crankshaft well produced six-throw shafts, and another sixteen.

Fuels to fit the engine cannot always be taken directly from the ground. Since we know that the natural petroleum is not always best suited to an engine, we should look for processes to take these raw materials and make them into more suitable fuels. From what has been learned about the kinds of hydrocarbons which will stand the conditions of high compression, the possibilities of having hydrocarbon fuels for high powered engines appear almost limitless. With this regard, gasoline manufacturing processes are possibly to be considered not as a method of making gasoline, or even more gasoline, out of petroleum, but rather a method of making a fuel which can be burned in an engine with greater efficiency. This may or may not mean the greatest yield of gasoline, and eventually we should expect to see an economic balance between the cost of the fuel, the efficiency with which it may be burned in an engine, and the utilities of satisfaction which its burning contributes in making the automobile go.

RUMANIA WELL HAS AIR LIFT FROM 5,020 FEET

Probably a record in deep airlift operation is set up by well No. 301 of Romano-Americana S.A. (Standard Oil Co. of N. J.) at Moreni-Ghirdoveni, Rumania.

This well is 6,142 feet deep and is producing from what is known as the third Meotic sand through 5,020 feet of 4-inch tubing suspended in 8-inch casing. The production is around 1,635 bbls. of paraffinous crude, specific gravity 0.828, per day. Compressed air at about 290 pounds is supplied by three Ingersoll-Rand 11 and 5 by 10-inch type XOB-2 compressors, having a combined piston displacement of 990 cubic feet per minute, belt-driven by three 90-horsepower Superior twin cylinder gas engines. The gas-oil ratio is about 376 cubic feet per barrel. As soon as arrangements can be made, gas will probably be substituted for air as the lifting medium, at which time it will be passed through the company's neighboring casinghead gasoline absorption plant.

OIL OPERATOR INJURED

CHATHAM, Ontario, Jan. 4.—Ben Whitlock, oil operator in charge of the Kelly oil properties near Petrolia, was accidentally shot by a rifle in the hands of his 7-year-old son. He is reported making a good recovery.

FAVOR TARIFF ON OIL

At a regular meeting of the board of directors of the California Oil and Gas Association a resolution was passed that efforts be made to secure the enactment by the present Congress of a law placing a tariff on the importation of foreign crude oil and refined products.

CLASSIFIED WANTS

LEASES—PRODUCTION

TEXAS PANHANDLE Gas Production and Royalties is my Hobby—get my prices. Wire or write. E. B. Reeves, Box 13, Alanreed, Gray County, Texas.

PRODUCING ROYALTIES
OKLAHOMA CITY POOL
PERPETUAL RIGHTS CORP.
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LEASE FOR SALE by owner. 20 acres 10 miles of the Texas and Humble Co.'s discovery, McFaddin, Marianna district. 2 miles Lion Co. gasser. See page 9, Dec. 10, The Oil and Gas Journal. Box 116, Bloomington, Texas.

ROYALTIES PRODUCTION

MID-CONTINENT OIL ROYALTIES
Royalties Sales Company
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Chicago, Ill.

KANSAS Royalties offseting midwest well Stafford County. Hugoton Gas Royalties. Lists, maps free. Harry Haynes, Grantville, Kans.

SUBMIT YOUR oil royalties on producing properties. I have active buying clientele. Maxwell J. Rowntree, 1238 Chrysler Building, New York City, N. Y.

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Speculative and Investment Royalties

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Service to dealers, Oklahoma, Kansas and East Texas.

ROYALTIES PRODUCTION

ATTENTION BROKERS—Well located, perpetual royalties and long term commercial leases South and West Texas very cheap. Write Oil Scout, P. O. Box 927, Houston, Texas.

OKLAHOMA producing royalties specializing in Oklahoma City Field.
Chester Imes
Petroleum Bldg. Oklahoma City

WONDERFUL OPPORTUNITY FOR A ROYALTY COMPANY

Will sell Royalty Interests in 100,000-acre spread or more already assembled, aggregating over 500 tracts in EAST TEXAS and other PROMINENT AREAS. Proper terms might be arranged if necessary. For further particulars write

G. T. Blankenship
916 Petroleum Building
Oklahoma City, Oklahoma

WOULD you invest $100 or more in excellent offset royalty spread East Texas Field at Kilgore or would you prefer holding oil lease near deep test well drilling in southeast Oklahoma. Write Guy J. Stumpff, consulting engineer, Box 934, Texarkana, Tex.

ROYALTIES in the territory of coming big development in Kansas, Stafford, Barton, Ellsworth, Kingman and Stevens Counties, core drilled. Also producing royalties. Special service to brokers. Send for list. James R. Haynes, Grantville, Kans.

MAILING LISTS

LIVE MAILING LISTS of stockholders in oils, royalties, leases and mining. J. E. Flory, 216 Worth Bldg., Fort Worth, Tex.

OKLAHOMA FIELDS

(Continued from Page 29)

that production should be in the hands of the companies that make the nominations and determine the outlet and the production of the field.

Storage of crude oil has been increasing on the leases during the last two months and it is estimated that the underproduction has reached 3,200,000 bbls. to December 31.

It is believed that oil has been going to storage in the State of Oklahoma at the rate of 44,000 bbls. a day during the month of December. It is estimated that 11,000 bbls. of this came from the Oklahoma City Field, and the balance, 33,000 bbls., from other parts of the State.

The situation at Oklahoma City is confusing partly due to the umpire's committee attempts to re-allocate the pipe line shipments. The necessity of reducing the daily production is apparent from the following table, which shows the reduction in the pipe line shipments. For the week ending December 26 the field produced 1,068,690 bbls. and the pipe line shipments totaled 990,257 bbls., leaving 78,433 bbls. going to storage. Oil shipments from the field have been declining since the first of December. For the week ended December 12, the shipments totaled 1,243,200 bbls., the following week 1,216,920 bbls. and the week ending December 26, 990,257 bbls. The total shipments by companies for the last two weeks were as follows:

Company—	Dec.26	Dec.19
Champlin	27,939	29 235
Continental	87,794	153,187
Empire	158,530	177,470
Magnolia	74,747	80.282
Oklahoma	76,243	73,862
Operators	31,758	12,681
Prairie	12,871	20 204
Shell	76,091	80,286
Sinclair	100,730	123,176
Tidal	4,293	5,684
T.I.O.	20,967	20,676
Century	11,509	9,100
Petroleum	6,300	6,934
Wilcox	29,308	30,126
Canadian	2,658	2,310
Globe	9,265	11,160
Peacock	2,425	2,725
Capitol	7,982	.....
Anderson-Prichard	241	.....
Crude Oil	.....	1,420
Frisco Ref.	.....	534
Stanolind	250,506	285,869
Total	990,257	1,216,920

New Wells in Fish Pool

New producers in the Fish Pool, which is located along the boundary lines of Seminole and Hughes Counties, were added to the field during the week. One of these new wells was located in the south end of the pool indicating that end of the field may yield large wells. The well was Jarvis & Holm's No. 1 Fish, NE cor. NW NE, Section 30-7-8, making 1,075 bbls. of oil in five hours. It was shut in when all the stock tanks were filled. The oil was found at 2,984-3,010 feet. The other well was Burke-Greis Oil Co.'s No. 1 Catlett, SW cor., Section 20-7-8. It was connecting up to make a production test. The well is estimated at 500 bbls. a day. The oil was found in the pay at 3,045-3,101 feet.

The Texas Company's No. 1 Eliza, in Section 19-7-8, was recently completed for 360 bbls. of oil a day from the pay at 3,067-3,106 feet. Other tests nearing the pay horizons include the following: Mid-Continent Petroleum Corp.'s No. 1 Orr-Woodward, NE cor. NW NE. Section 9-7-8, which has cemented casing at 2,895 feet, with the total depth of 2,937 feet, after finding a showing of oil. It is expected to make a production test in a few days. Empire Oil & Refining Co.'s No. 2 Fish, SW cor. SE SE, Section 19-7-8, was drilling around 2,600 feet, on the last report.

New operations preparing to start in the field include Producers & Refiners Corp.'s No. 1 Jacobs, SE cor. SW, Section 9-7-8, which was preparing to spud. Perrine and others' No. 1 in the NE cor., Section 15-7-8, has spudded and shut down. George Orr and others' No. 1 Chupco, NW cor. SW NW, Section 15-7-8, is a rig complete and it is expected tools will be moved in this week.

Water was found in the Simpson sand in one of the important wildcat tests that was located by the use of the seismograph. The test is Mid-Continent Petroleum Corp.'s No. 1 Farmer, SE cor. SW NW, Section 2-6-4, in the southern part of Pottawatomie County, just south of the St. Louis Pool, in the Greater Seminole district. The Simpson sand was found at 4,265-71 feet, where a showing of oil and water was found. After a bailing and swabbing test it was found to contain mostly water. The test was shut down and in all probability will be drilled to the Wilcox sand.

In the West Seminole Pool, in Seminole County, Carter Oil Co.'s No. 3 Camp, NW cor. SE SW, Section 20-9-6, swabbed and flowed 615 bbls. of oil in 17 hours, from the formation at 2,695-2,722 feet.

During the week ending January 2 a new well was completed in the Tatums Pool, in Carter County, indicating the area has considerable future possibilities. It was the first well completed in the pool in approximately six months. Carter Oil Co.'s No. 2 J. C. Taylor, NW cor., Section 19-1s-2w, on the northwest edge of the field, flowed and swabbed 1,023 bbls. of oil the first 24 hours. The production was found in sand at 1,840-2,000 feet, with a total depth of 2,050 feet.

Another test was preparing to start in the Tatums Field, the Tatums Oil Co.'s No. 1 J. C. Carter, SW cor. NW, Section 13-1s-3w. The derrick has been completed and the tools are being moved in. The Tatums Oil Co. has taken over the Paul Turner interests.

Stephens County operations were routine during the week. Continental Oil Co.'s No. 1 Dare, NE cor. SW SE, Section 2-2s-8w, was spudding. G. Pace and others' No. 1 Mullens, C SW SW, Section 35-2s-8w, was also spudding. M. C. Brown and others' No. 1 Thompson, NE cor. SE SW, Section 35-1s-8w, has landed casing on top of a sand at 1,676 feet. P. L. Gilbert and others' No. 1 Dare, SW cor. NW SE, Section 2-2s-8w, has landed casing at 1,368 feet and will test the sand.

Seminole Production

The production of the Greater Seminole area for the week ending January 2 was approximately 160.105 bbls. compared to 166.985 bbls. the previous week. The Seminole Field, which includes the first 12 pools listed below, averaged approximately 119,485 bbls.

Pool—	Bbls.
Little River	19,885
East Little River	5,735
Carr City	12,810
Maud	1,900
Mission	7,240
Bowlegs	12,820
Earlsboro	14,535
South Earlsboro	2,245
East Earlsboro	15,940
Seminole	21,630
East Seminole	1,140
Searight	3,605
Total	119,485
Allen	9,345
Asher	660
Wanette	2,795
Konawa	5,325
Sasakwa	1,695
St. Louis-Pearson	20,300
Total	160,105

Carter County

Frank Lundy and others' No. 1 Spragins, NE cor. NW SW, Section 8-1s-2w, is a rig under construction.

Coal County

Mid-Western Oil & Gas Co. moved a machine in for No. 1 Hall, C SE NE, Section 25-3-9.

Oklahoma County

T. B. Slick Estate made location for No. 10 Classen-Edwards, SW cor. NE NW SW, Section 3-11-3w. No. 11 Classen-Edwards, SE cor. NE SW, Section 3-11-3w, is a location.

Okmulgee County

Penrod & Thompson's No. 4 J. Shepard, NW cor. SW NW, Section 29-12-14, has been deepened to sand 3,050-64 feet and completed for 1,000,000 feet of gas.

Muskogee County

G. S. Wilson has a machine on the location for No. 1-A Barnett, NW cor. SW, Section 35-16-15. W. F. Simpson and others' No. 2 Cobb, CSL SE NE, Section 6-14-17, is spudding. Mack Drilling Co.'s No. 4 Peterson, SW cor. NW SW NW, Section 34-16-15, made 50 bbls. in sand at 1,190-1,220 feet. J. V. Dunbar and others' No. 1-A Spaulding, NW cor. SE SW, Section 4-15-18, has been completed for 40 bbls. in sand at 1,003-13 feet. T. E. Wheeler and others' No. 1-A Field, CWL SE NW, Section 18-15-18, has been abandoned at 1,343 feet.

Pawnee County

Gus Beagle's No. 1 Duck, CEL NE NE, Section 30-20-10, has been completed for 184,000 feet of gas in Bartlesville sand at 2,045-92 feet.

Pottawatomie County

Gypsy Oil Co. moved the rig in for No. 5 Horn, NW cor. NE NE, Section 23-6-3.

Wagoner County

Marr and others' No. 1 C. Snake, SE cor. NE NW, Section 26-18-15, is a machine. The Braman Oil Co.'s No. 1 M. Andy, SW cor. NW, Section 32-18-17, has been completed for 500,000 feet of gas in sand at 1,023-44 feet.

Hughes County

Producers & Refiners Corp.'s No. 1 Narcomay, NW cor. SE SW, Section 9-7-8, is drilling at 154 feet.

Seminole County

Prairie Oil & Gas Co. and T. B. Slick Estate made location and is building the rig for No. 1 L. Maxey, NE cor. SW NW, Section 1-8-6, Carr City area.

SECRETARY WILBUR SAYS OIL TARIFF IS NOT CURE

WASHINGTON, D. C., Jan. 4.—Administration officials are convinced a tariff on oil would fail to cure the petroleum industry's basic malady—that of overproduction.

Secretary Wilbur, chairman of the Federal Oil Conservation Board, said the problems of the oil industry would have to be solved on a much broader base than a duty on importations.

"The importation of oil," Secretary Wilbur said, "is so small a part of the whole oil problem it would be thoroughly inadvisable to concentrate the attention of Congress on importations and not have it at the same time look with a critical eye on careless and wasteful production in this country."

Secretary Wilbur said he looked with some hope to a permanent working arrangement such as outlined in his program.

This hope, he added, springs from the fact that within the last year the most significant development in the oil industry was the one-page compact signed on September 13 between the governors of Oklahoma, Kansas and Texas, agreeing to restrict production to a scientifically determined figure.

"These oil producing states," he said, "with the informal adherence of California, New Mexico, Colorado and Wyoming, have for the first time collectively used their police power for the conservation of a natural resource which is too widely scattered for any one state to control by itself."

Secretary Wilbur outlined his program as follows:

An adequate conservation agency in each state, enforcing within its boundaries conservation laws uniform in principle with those of other major producing states.

An interstate advisory board constantly studying supply and demand and fixing periodic quotas for production by the various states.

An interstate compact under which the states agree to appoint this committee and enforce these quotas, and at the same time agree on uniform practices of conservation.

A joint federal and state participation in negotiation with governments for foreign production quotas to correspond with our own, so that conservation here would not be followed by excessive importations or undue loss of export trade.

Some form of federal protection for the consumer.

Congressional sanction of these steps.

ALEXANDRIA PLANS TERMINAL

The Egyptian government has approved plans for the enlargement and improvement of the harbor at Alexandria, the plans calling for the construction of a pier 1 kilometer in length for handling petroleum. A road 18 kilometers long will be run from the oil terminal into Alexandria and a navigable canal would be built to relieve traffic on the Mahmoudieh Canal. The proposed improvements at Alexandria have been suggested as a step to avert the centering of the eastern Mediterranean trade at Haifa, a port of Jerusalem, which is now being thoroughly modernized, and which will be the terminal of one of the branches of the Iraq pipe line.

THE OIL MAN'S CALENDAR

January, 1932

9-15—Detroit, Mich., convention and road show, American Road Builders Association, Airport Building.

9-16—New York, National Automobile show.

11—Memphis, Tenn., Tennessee Oil Men's Association, Peabody Hotel.

11-12—Fargo, N. D., North Dakota division, Northwest Petroleum Association, Waldorf Hotel.

11-15—Detroit, Mich., American Road Builders Assn., Road Show.

14-15—Minneapolis, Minn., Minnesota division, Northwest Petroleum Association, Radisson Hotel.

15—Tulsa, Mid-Continent section, A.S.M.E.

21-22—Oklahoma City, Okla., Oklahoma Petroleum Marketers Association.

21-22—Washington, D. C., Committee D-2, American Society for Testing Materials.

22-30—New York, National Motor Boat Show, Grand Central Palace.

25-29—Detroit, Mich., annual meeting, Society of Automotive Engineers.

27-28—Milwaukee, Wis., Wisconsin Petroleum Association, Hotel Pfister.

27-28—Sioux Falls, S. D., South Dakota Independent Oil Men's Association, Carpenter Hotel.

30-February 6—Chicago, Ill., National Automobile show.

February

9—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel.

9-10—Des Moines, Iowa, eleventh annual convention, Iowa Petroleum Association, Fort Des Moines Hotel.

17-18—Springfield, Ill., Illinois Petroleum Marketers Association, Leland Hotel.

23-25—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Wallick Hotel.

March

14-18—New Orleans, La., American Chemical Society.

21-27—Los Angeles, Calif., third annual Oil Equipment and Engineering Exposition.

23-25—Detroit, Mich., Michigan Oil Men's Association, Statler Hotel.

24-26—Oklahoma City, Okla., American Association of Petroleum Geologists, Biltmore Hotel.

28-April 1—New Orleans, La., American Chemical Society.

April

2-10—Detroit, Mich., National Aircraft Show.

11-16—Boston, Mass., Ninth annual convention, American Oil Burner Association.

21-22—Cleveland, Ohio, semiannual meeting, National Petroleum Association, Hotel Cleveland.

22-24—Dallas, Tex., Petroleum Industry Electrical Assn., Baker Hotel.

27-29—White Sulphur Springs, W. Va., National Pipe and Supplies Assn., Greenbrier Hotel.

EAST CENTRAL TEXAS WILDCATS

(Continued from Page 25)

M. T. Beeler's No. 1 Finley and Thomas, 150 ft. from N and 150 ft. from W of 10-ac. lease, C. H. Alexander Sur. ....Derrick.
Branson et al's No. 1 J. J. Fuller, 1,050 ft. from N and 170 ft. from W of survey, M. Alexander Sur. ..Drlg. 3,620 ft.
Bridwell and Fikes' No. 1 D. Lockett, 284 ft. E, 326 ft. N of SW cor. of 25-ac. lease, D. Ferguson Sur. ..Derrick.
Byrd-Frost Oil Co.'s No. 1 Alexander and Strong, 330 ft. from S and E lines of 26-ac. tract, M. Tennison Sur. ....Derrick.
Danciger Oil & Ref. Co.'s No. 1 S. Ball, located on a 2-ac. tract, Mary Van Winkle Sur. ....Derrick.
Lewis Godlin's No. 1 E. L. Walker, 330 ft. N of road, 330 ft. from E line of 30.2-ac. tr., M. Dillard Sur...Derrick.
Gulf Prod. Co.'s No. 1 M. F. Barker, 330 ft. S, 141 ft. E of NW cor. of 64-ac. lease, M. Dillard Sur. ....Drlg. 3,496 ft.
Gulf Prod. Co.'s No. 1 J. S. Elder, center of E and W line of 31-ac. tr., John Wilkinson Sur. ....Drlg. 2,575 ft.
Jerry Hawkins' No. 1 Shilo Church, center 3-ac. tr., G. W. Hooper Sur. ....Derrick.
W. Hetherington's No. 1 E. S. Haggler, on 3-ac. tr., 1,600 ft. E, 127 ft. S of NW cor. of survey, J. S. Carrithers Sur. ....Drlg. 2,450 ft.
Humble O. & R. Co.'s No. 1 H. M. Lawrence, 540 ft. from N and 219 ft. from W of 100-ac. tr., David Ferguson Sur. ....Derrick.
J. O. Hodges et al's No. 1 G. W. Ritchie, center of S ½ acres of N 10 acres of E 20 acres of Ritchie 40-ac. tr., Wm. Carlton Sur. ....Fishing for liner.
D. L. Hoffman's No. 1 Bumpass, 360 ft. from E line and 260 ft. from W line of 10-ac. lease, W. H. Castleberry Sur. ....Drlg. 2,650 ft.
Jackson and Bradstreet's No. 1 M. Young, center 2-ac. tr., J. R. Crosby Sur. ....Rig up.
B. K. Isaac's No. 1 J. A. Tuttle, center of 4.5-ac. tr., H. Hathaway Sur. ....S.D. 2,878 ft.
Kroll's No. 1 J. Spear, center ¾-ac. lease, Blk. 4, Mary Van Winkle Sur. ....Bldg. derrick.
K. B. Oil Co.'s No. 1 Dickson, 150 ft. from S and 150 ft. from W of 5-ac. lease, Mary Van Winkle Sur. ..S.D. 700 ft.
Louisiana Oil & Ref. Co.'s No. 1 W. C. Griffin, 372 ft. from S line, 330 ft. from E line of 79-ac. tr., L. B. Outlaw Sur. ....Drlg. 1,830 ft.
Magnolia Pet. Co.'s No. 1 Redford, 330 ft. from N and W lines of 75-ac. tr., John Blair Sur. ....Rigging up.
E. G. Moren's No. 1 C. J. Dollahite, center of W 10 acres of 60-ac. tr., D. Sanches Sur. ....Set csg. 3,631 ft.
Natalie Kimsey's No. 1 C. C. Crews, 330 ft. from N line and center of E and W lines of 60-ac. tr., L. Perkins Sur. ....Derrick.
Patrick Pet. Co.'s No. 1 Watson, 330 ft. from N line, 330 ft. from E line of lease, M. V. Winkle Sur. ....Derrick.
J. D. Patty et al's No. 1 J. C. McCormick, 207 ft. SE at right angles to Gladewater-Tyler road and 540 ft. SW of Abernathy and Kirkpatrick's No. 1 Gregston, M. Dillard Sur. ....Derrick.
J. C. Roger's No. 1 John Boyd, center of Blk. 12, Gladewater Townsite, H. R. Hokit Sur. ....Location.
Ross et al's No. 1, located on Findley & Thomas 50-ac. tr., 150 ft. from S line and 6.66-ac. lease, C. H. Alexander Sur. ....Derrick.
Shell Pet. Corp.'s No. 1 S. C. Fishborn, 330 ft. from N and E lines of 100-ac. lease, F. W. Johnson Sur. ..Location.
Simms Oil Co.'s No. 1 Bob Wood, 330 ft. from N and W lines of 100-ac. tr., J. Skillum Sur. ....Set 10-in. csg. 104 ft.
C. R. Starner's No. 1 G. C. Dunaway, center of Blk. 5, 115 ft. S, 475 ft. W, SE cor. H. R. Hokit Sur. ....Running csg. 3,624 ft.
Steen Drlg. Co.'s No. 1 W. D. Lacy, 330 ft. from S and W lines of 40-ac. tr., E. H. Gresham Sur. ....Set 12½-in. csg. 93 ft.
Sun Oil Co.'s No. 1 Calvin Brown, 330 ft. from most southerly S line and middle of E and W lines of lease, L. B. Outlaw Sur. ....Derrick.
Sun Oil Co.'s No. 1 J. E. Rollins, 1,492 ft. from N line, 1,492 ft. from S line, 589 ft. from W and E lines of 85-ac. lease, M. Scott Sur. ....Derrick.
Tom C. Patten's No. 1 Geo. Walter, center of 1-ac. tr., and 396 ft. from W line of lease, Mary Van Winkle Sur. ....Location.
Travis and Wair's No. 1 A. B. Loughridge, 330 ft. from S line, 590 ft. from E line of 30-ac. lease, Thomas Johnson Sur. ....Drlg. 2,250 ft.
Valentine Oil Co.'s No. 1 Goyne-Hughey, 4,100 ft. from S and 6,800 ft. from W of survey, Mary Van Winkle Sur. ....Rigging up.

HENDERSON COUNTY

J. M. Rogers' No. 1 M. N. Gussett, 150 ft. from N line, 1,000 ft. from W line of 103.5-ac. tr., L. D. Stover Sur. ....Spudded and S.D.
South American Drlg. Co.'s No. 1 D. R. Broome, 330 ft. from N and W lines of SE 40 acres of 425-ac. tr., Thomas Parmer Sur. ....T.D. 3,865 ft.

HILL COUNTY

Sherman-Houseman's No. 1 J. F. Griffith, in Samuel Waddell Sur. ....Drlg. 3,256 ft.

HOPKINS COUNTY

R. L. Chapman's No. 1 J. D. Jumper, 175 ft. from N line, 285 ft. from W line of lease, Jas. Webb Sur. ..S.D. 60 ft.
Roark et al's No. 1 Taylor, 220 ft. from N and W lines of 80-ac. tr. in the John Polk Sur. ....S.D. 540 ft.

HOUSTON COUNTY

Apex Drlg. Co.'s No. 1 Thompson Bros., 250 ft. out of NW cor. of 200-ac. tr. in John Shears Sur. ....Prepare to test; T.D. 2,364 ft.
Ramsland and Ramsland's No. 1 Pennington, 760 varas W of E line and 500 varas from S line of survey on 186-ac. tr., Ramond LaGarza Sur. ....S.D. 1,692 ft.
C. T. McManus' No. 1 Harron, 300 ft. out of NE cor. of 327-ac. tr., J. P. Procella Sur. ....Spudded and S.D. 37 ft.

HUNT COUNTY

Branson et al's No. 1 Gray ....Location.
Russell et al's No. 1 Brooks and Quattlebaum ....S.D. 1,455 ft.

KAUFMAN COUNTY

Neffpler et al's No. 1 Kaufman County Farm, 210 ft. from N line, 672 ft. from W line of 524-ac. tract, D. Falcon Sur. ....Derrick.

LAMAR COUNTY

G. W. Davy et al's No. 1 McGustion, 450 ft. from S line, 450 ft. from W. line of farm and survey, Galet Wood Sur. ....Set 10-in. csg. -50 ft.
Optometrist Oil Club's No. 1 J. M. McFadden, 450 ft. from S and W lines of McFadden E 25-ac. tr., J. Deck Sur. ....T.D. 1,672 ft. (corrected)

LEON COUNTY

Cooper et al's No. 1 Lynch, 4,000 ft. from W line and 350 ft. from S line of Thos. H. Gardner Sur., and in 200 ac. tr. ....S.D. 1,931 ft.
Kaiser Drlg. Co.'s No. 1 Dr. J. M. Blair, 1,010 ft. from N line, 1,986 ft. from W line, Sec. 19, Blk. E, Lucia Hibbard Sur. ....Derrick on ground.
Sun Oil Co.'s No. 2 Grayson ....Coring 5,625 ft.

MORRIS COUNTY

Dumas et al's No. 1 Tom Ball, 1,046 ft. from E and 348 ft. from S of 71-ac. tr., A. S. Young hrs. Sur. ..Derrick.

NACOGDOCHES COUNTY

Bunte et al's No. 1 A. F. Boatman, 330 ft. from S and 150 ft. from W of 67-ac. tr., Wm. A. Moore Sur. ....S.D. 1,606 ft.
G. A. Teague's No. 1 Norris, 60 ft. NW of E line and 420 ft. S of road in 73.5-ac. tr., Hosea Y. Barbo Sur..Derrick.
Gainer et al's No. 1 Nice Well, 18 miles SE of Nacogdoches, 660 ft. from S and 150 ft. from W of Wells tract in A. Cherino Sur. ....S.D. 3,430 ft.
Joiner and Hensen's No. 1 Andy Legg, 330 ft. from N and 330 ft. from W of tract, John Durst Sur. ....S.D. 3,920 ft.
Scully & Harwell's No. 1 R. I. Driver, 1,500 ft. from SE cor. of P. B. Ballard 125-ac. tr., 15 miles SE of Nacogdoches in Patricia De Torres Sur. ....Drlg. 3,316 ft.
Taylor-Vaughn's No. 1 Dixon Greer, 160 ft. from W and 450 ft. from N lines of 60-ac. tr. in the M. G. Horrera Sur. ....S.D. 265 ft.
Creighton Drlg. Co.'s No. 1 J. N. Stewart, center of 79-ac. tr. in the Jose Ignacio Y'Barbo Sur. ....S.D. 3,226 ft.

POLK COUNTY

Humble O. & R. Co.'s No. 1-A Onolaska Live Stock, 1,700 ft. NW along property line from most northerly E cor. of survey and 75 ft. SW at right angles, Wm. B. Hardin Sur. ....Drlg. 1,045 ft.

RAINS COUNTY

C. H. Bayliss' No. 1 Ownby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. ....S.D. 4,036 ft.

RED RIVER COUNTY

Droppleman and Bundy's No. 1 J. W. Cunningham, 250 ft. from the S and 1,066 ft. from the E lines of B. M. Ballard Sur. ....Rig up.
Gibbs et al's No. 1 Mace (old well being drilled deeper), 1,200 varas from S line, 1,500 varas from E line of survey, Wm. Cullam Sur. ....S.D. 3,500 ft.
Henson and Hudson's No. 1 H. H. Lennon, 2,790 ft. W and 300 ft. S of most easterly NE cor. of survey, J. E. Edmondson Sur. ....Spudded and S.D.
Harris & Joiner's No. 1 E. Howison, 225 ft. S, 185 ft. W of 79-ac. tr., Wm. Humphreys Sur. ....S.D. 1,940 ft.
Concord Oil Co.'s No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 200 ft. E of E line of Robert Glass Sur. ....S.D. 2,190 ft.
L. G. Priest's No. 1 J. M. Stiles, 900 varas S and 500 varas E most northerly NE cor. of Jones Bankston Sur. in the Levi Dean Sur. ....S.D. 1,047 ft.

ROCKWALL COUNTY

Bucanner Oil Co.'s No. 1 H. L. Lofland, center of 69-ac. tr. in W. M. Bird Sur. ....Set 10-in. csg. 120 ft.

RUSK COUNTY

S. P. Borden's No. 1 T. O. Mason, center of 3.5-ac. lease, J. B. DeCadena Sur. ....Derrick.
A. J. Brown's No. 1 Strong, J. Hallam Sur. ....S.D. 860 ft.
Roy Bryant's No. 1 Daisy Bradford, 110 ft. from S line, 150 ft. from W line of 7-ac. lease, Juan Ximines Sur. ....S.D. 3,708 ft.
Byrd-Frost's No. 1 Buckner, J. E. Peyton Sur. ....S.D. 2,840 ft.
Chapman's No. 1 W. M. Futch, 330 ft. from N line and 500 ft. from E line of survey and lease, Jos English Sur. ....Waiting on cmt. to set 3,630 ft.
F. C. Clark's No. 1 A. Johnson, center of 3-ac. lease, E. A. J. Evans Sur. ....Waiting on cmt. to set 3,753 ft.
Goodgame and Eby's No. 1 W. W. Holland, 450 ft. from N line, 400 ft. from W line of survey, J. Lindley Sur..Waiting on cmt. to set 3,823 ft.
Hathaway et al's No. 1 Gray, J. M. McLain Sur. ....S.D. 2,995 ft.
H. E. Hiden's No. 1 Varney, 100 ft. from N line, 125 ft. from E line of road, W. G. Tutt Sur. ....Derrick.
Howell's No. 1 Irion and Motley, 200 ft. from N line, 1,270 ft. from W line of survey, J. Lindley Sur. ....Derrick.
Humble O. & R. Co.'s No. 1 Ben Peterson, 453 ft. from N line, 330 ft. from W line of N line and 330 ft. from W line of 50-ac. lease, J. Lewis Sur. ....Drlg. 2,891 ft.
Humble O. & R. Co.'s No. 1 J. E. Arnold, 330 ft. from S and W lines of 23.5-ac. lease, H. Smith Sur. ....Rigging up.
A. W. Jones Oil Co.'s No. 1 J. M. Grant, 346 ft. from S line, 1,076 ft. from E line of 100-ac. tr., T. J. Walling Sur. ....S.D. 2,375 ft.
Lewis Prod. Co.'s No. 1 W. D. Peterson, 150 ft. from S and W lines of lease, J. Lewis Sur. ....Derrick.
La. O. & R. Co.'s No. 1 Jernigan, 330 ft. from S line, 1,033 ft. from W line of 100-ac. lease, McCabe Sur...Location.
W. H. McMurray's No. 1 Blackwell, 238 ft. W and 247 ft. N of most westerly NE cor. of Stone's 169-ac. tr., M. J. Pru Sur. ....T.D. 3,704 ft.; waiting on cmt. to set.
Mid-Kansas Oil & Gas Co.'s No. 1 W. T. Grissom, 330 ft. from N line, 330 ft. from W line of lease, J. B. Brown Sur. ....Location.
Geo. L. Pace's No. 1 E. B. Alford, center of 5-ac. lease, T. J. Moore Sur. ....Derrick.
Pitzer and West's No. 1 Mattie Giles, 150 ft. from S line, 100 ft. from E line of 13.7-ac. tr. on a 1-ac. lease, M. J. Pru Sur. ....Derrick.
Ross Seward's No. 1 Burton, J. J. Y'Barbo Sur. ....Fishing 3,077 ft.
Shasta Oil Co.'s No. 1 H. Alexander, 330 ft. from N and W lines of 30-ac. lease, T. Grace Sur. ....Derrick.
Stanolind O. & G. Co.'s No. 1 T. O. Mason, 532 ft. W of SE cor. of tr. and center of N and S lines of lease, J. B. DeCadena Sur. ....Prepare to spud.
Stanolind O. & G. Co. and Pure Oil Co.'s No. 1 R. A. Moores, 330 ft. from S line, 2,378 ft. from W line of 210-ac. tr., J. B. DeCadena Sur. ....Rigging up.
Stanolind and Pure Oil Co.'s No. 1 R. J. Burton, 330 ft. from S and W lines of 145-ac. tr., Thos. M. White Sur. ....Drlg. 3,979 ft.
Stanolind and Pure Oil Co.'s No. 1 Ross Lacy, 330 ft. from N and E lines of 100-ac. tract, J. H. Sparks Sur. ....Location.
Sullivan and Burch's No. 1 E. B. Alford, 550 ft. W, 150 ft. S of NE cor. of 75.75-ac. tr., Isaac G. Parker Sur. ....Drlg. 1,875 ft.
The Texas Co.'s No. 1 J. M. Price, located in the NW cor. of J. M. Price's 90-ac. lease, Thos. M. White Sur. ....Waiting on cmt. to set.
The Texas Co.'s No. 1 A. W. Kersh, located in the NE cor. of A. W. Kersh's 211-ac. tr., E. B. Fowlkes Sur. ....Drlg. 3,497 ft.
M. L. Thompson's No. 1 Price, Hugh Million Sur. ....S.D. 3,280 ft.
Tidal Oil Co.'s No. 1 Otis Whittington, 250 ft. out of most southerly NW cor. of 40-ac. tract, John Darley Sur. ....Location.

JOINER POOL—RUSK COUNTY

Armstrong's No. 1 Alford, 151 ft. from S and 1,080 ft. from W of survey, T. J. Moore Sur. ....Derrick.
Mass and Tucker's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E. Dalines Cartimas Sur. ....S.D. 3,350 ft.
Paulett et al's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ....Bailed dry after small show of gas; T.D. 1,313 ft.
Pitts et al's No. 1 Freeman, 1,000 ft. N of S line and 1,000 ft. E of W line of 181-ac. tr., J. Watkins Sur. Rig blew down.

SAN AUGUSTINE COUNTY

Smith and Baker's No. 1 Pickering Lbr. Co., 6 miles N of San Augustine, E. Quick Sur. ....Derrick.

SMITH COUNTY

Bunte et al's No. 1 Atkinson, 1,000 ft. from S line and 1,000 ft. from N line of 330-ac. tr., Calloway Dean Sur. ....Derrick.
Cotton Belt Oil Co.'s No. 1 C. S. Jackson, 500 ft. from N and 500 ft. from W of 39.85-ac. tr., Henry Mickleborough Sur. ....S.D. 4,038 ft.
J. R. Mecker et al's No. 1 Lewis Bacon, 990 ft. from N line, 996 ft. from W line, Wm. Sparks Sur. ....S.D. 2,370 ft.

Tytex Oil Co.'s No. 1 Alex Weldert, 2,030 ft. from S line, 525 ft. from E line of Franklin T. Bodenheimer Sur. ..... Derrick.

TITUS COUNTY

Perry V. Cook's No. 1 M. C. Rogers, center of SW of Moore Sur. ..... S.D. 3,249 ft.
Joiner et al's No. 1 Clayton Brown, 1,300 ft. from E and 400 ft. from most northerly S line of V. Evans Sur. .. S.D. 2,250 ft.
J. P. Flannagan's No. 1 McGill, 450 ft. from S and 662 ft. from W of H. C. Riggs Sur. ..... S.D. 7,193 ft.

UPSHUR COUNTY

Cranfill & Reynold's No. 1 Milton Rash, 1,687 ft. E of W line and 330 ft. N of S line of Rash estate, E. N. Eubanks Sur. ..... T.D. 3,729 ft; set 6⅝-in. csg.
Conservative Oil Co.'s No. 1 J. N. Tuttle, 620 ft. from E line, 320 ft. N of road, D. Ferguson Sur. ..... Rigging up.
Galvez Oil Co.'s No. 1 Moore heirs, 330 ft. S, 990 ft. E of NW cor. of 50-ac. tr., D. Ferguson Sur. ..... Waiting on cmt. to set.
Hawkeye Pet. Co.'s No. 1 H. Fenton, 330 ft. from W line and center of N and S lines of 13.5-ac. tr., G. W. Hooper Sur. ..... Location.
Humble O. & R. Co.'s No. 1 D. C. Shelton, 273 ft. from E of W line, 150 ft. N of S line of 19.5-ac. lease, Wm. King Sur. ..... S.D. 3,742 ft; went dead, made 25 bbls. in 4 hrs.
H. C. Hurley's No. 1 W. F. Smith, 330 ft. from E line and center of N and S lines of S 25 acres of W 50 acres of 100-ac. tr., J. Pineda Sur. ..... Rig up.
Jackson and Bradstreet's No. 1 Victory, center of 25-ac. lease, E. A. J. Evans Sur. ..... Drlg. 2,766 ft.
J. W. Love's No. 1 Bain, 200 ft. from N line, 2,093 ft. from W line of survey, W. H. Williams Sur. ..... Moving in.
Murray Tool & Supply Co.'s No. 1 A. J. Sanders, 930 ft. from N line, 330 ft. from E line of 88.33-ac. tr., T. Allen Sur. ..... Drlg. 3,590 ft.
Pilot Oil Co. et al's No. 1 J. D. Ray et al, 1,050 ft. from N line, 950 ft. from S line, 990 ft. from W line of 218-ac. tr., A. H. Wood Sur. ..... S.D. 1,649 ft.
Shano Oil Co.'s No. 1 D. Rodden, 856 ft. from N and S lines, 544 ft. from W and E lines of W 40 acres of S 80 acres of 100-ac. tr., Marshall Mann Sur. .... Testing 3,795 ft.
J. A. Wood's No. 1 A. J. Sanders, 271 ft. S, 330 ft. W of NE cor. 45-ac. lease, T. Allen Sur. ..... Drlg. 110 ft.
Wolf's No. 1 Cook, center of 115-ac. tr. in Jacob Walker Sur., 5 miles W of Rosewood ..... S.D. 1,100 ft.

VAN ZANDT COUNTY

Barton et al's No. 1 C. L. Hubbard, 600 ft. out of NE cor. of Hubbard 225-ac. tr., 3½ miles S of Canton, M. J. DeCadena Sur. ..... S.D. 2,104 ft.
Kelly O. & G. Co.'s No. 1 Lemsford, center of Lemsford tr., John Conner Sur. ..... S.D. 2,300 ft.
Thomasson, Inc.'s No. 2 W. P. Forster, 600 ft. from N and 450 ft. from E of SW cor. of Forster 151-ac. tr. in the F. Montgomery Sur. ..... S.D. 3,200 ft.
Priest et al's No. 1 B. G. Beckham, 150 ft. from E line, 33 ft. from W line of 100-ac. tr., A. S. Johnson Sur. .. Drlg. 3,880 ft.
Pure Oil Co.'s No. 4 L. M. Brawner, 955 ft. E of W line of base and 200 ft. S of N line of base, John Walling Sur. ..... Running liner 2,928 ft.
Pure Oil Co.'s No. 2 Mrs. C. White, 250 ft. E of W line, 250 ft. S of N line, John Walling Sur. ..... Derrick.
Pure Oil Co.'s No. 4 O. L. and L. L. Swain, 150 ft. S of N line, 203 ft. E of W line of lease, John Walling Sur. ..... Drlg. 2,685 ft.
Pure Oil Co.'s No. 1-T V. T. Davis, 400 ft. N of N line of Tunnell No. 8 lease, 480 ft. W of E line of survey, Nacogdoches County School Land Sur. ..... Drlg. 6,038 ft.
Pure Oil Co.'s No. 4 W. H. Cook, 325 ft. S of N line, 604 ft. W of E line of 31-ac. tract, Mund Gross Sur. .. Location.
Pure Oil Co.'s No. 6 M. F. Shirley, 150 ft. S of N line, 150 ft. W of E line of base, John Walling Sur. .... Location.
The Texas Co.'s No. 2 R. V. White, 200 ft. N of S line, 250 ft. W of E line of base, John Walling Sur. .... Location.
Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... S.D. 2,850 ft.

WOOD COUNTY

Talko Oil Co.'s No. 1 G. T. Ross, B. L. Smith Sur. ..... S.D. 1,550 ft.
Wood County Dev. Co.'s No. 1 Davis, approximately 180 ft. from S line of 160-ac. tr. and 2½ miles S of Kantes in Sarah McDonald Sur. ..... Derrick.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 27)

Pulse-Shell Pet. Corp.'s No. 1 Wright, 330 ft. from S and W of Sec. 13, Blk. 3, I.&G.N. Sur. ..... S.D. 2,643 ft.
Saunders et al's No. 2 Sullivan, 822 ft. from W and 231 ft. from NE, 160 ft. S, 264 ac. of N½, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Will plug back to 3,275 ft. and shoot.
Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. ..... Drlg. 2,832 ft; show oil.
Tarber's No. 1 Saunders, 330 ft. N and W, Sec. 3, Blk. 1, B.B.&S.F. Sur. ..... Location.
Quicksand Oil Co.'s No. 1 Chapman, 250 ft. from N and E, Sec. 69, Blk. 25, H.&G.N. Sur. ..... S.D. 2,657 ft.
Vulcan Corp.'s No. 1 Carpenter, 330 ft. from S and E, Sec. 25, Blk. 35, H.&G.N. Sur. ..... Fishing 2,887 ft.

HUTCHINSON COUNTY

Baso's No. 1 Moore, 330 ft. from S and 330 ft. from E, in 80 acres in NW, Sec. 21, Blk. M-21, T.C.R.R. Sur. Building rig.
Danciger O. & R. Co.'s No. 1 Johnson, 330 ft. N and W, SE. Sec. 34, Blk. Y, A.&B. Sur. ..... Spudded and S.D.
Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 81, Blk. 45, H.&T.C. Sur. .. S.D. 450 ft.
Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N. and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ..... S.D. 3,064 ft; show oil and gas 2,996-97 ft; completed no gauge.
Smith & McDaniel et al's No. 4 Pitcher, 990 ft. from S and 330 ft. from W, Sec. 19, Blk. M-21, Sur. .... Drlg. 3,145 ft.
Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... Top pay 3,070-95 ft; 500 ft. oil in hole; drlg. 3,140 ft.
Harry Stekoll's No. 1 Whittenburg, 1,650 ft. from N and 330 ft. from E, Sec. 89, Blk. Z, G.C.&S.F. Sur. ..... Location.
Timms-Deatch's No. 4 Moore, 330 ft. N and W, Sec. 124, Blk. 4, I.&G.N. Sur. ..... Rig.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... T.D. 5,003 ft.

MOORE COUNTY

Gulf Prod. Co.'s No. 1 Burnett, 330 ft. from N and W, Sec. 356, Blk. 44, H.&T.C. Sur. ..... T.D. 3,549 ft; swabbed 295 bbls. in 17 hrs. with 2 to 5 bbls. water.
Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.&T. C. Sur. ..... Rig up.
Laurence et al's No. 1 Greenwald, 330 ft. from N and W, Sec. 277, Blk. 44, H.&T.C. Sur. ..... Spudding.
Magnolia Pet. Co.'s No. 1 Nield, 330 ft. from S and E of N½, Sec. 361, Blk. 44, H.&T.C. Sur. ..... S.D. 780 ft.
Pollard et al's No. 1 Hall, 330 ft. S and E, NE, Sec. 131, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.
Sunray Oil Co.'s No. 2 Jones, 330 ft. N and W, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.
Texas Interstate P. L. Co.'s No. 1-23 Thompson, C N½ NE, Sec. 23, Blk. 44, H.&T.C. Sur. ..... Location.
Texas Interstate P. L. Co.'s No. 1-37 Sneed, C NW, Sec. 37, Blk. 6-T, T.&N.O. Sur. ..... Location.
Texhoma Natural Gas Co.'s No. 2-P Sneed, 265 ft. E and 3,655 ft. of SW cor. of M. George Sur. but in Sec. 77, Blk. 3, G.&M. Sur. ..... Drlg. 810 ft.
Texhoma Nat. Gas Co.'s No. 2 Coon, C, Sec. 151, Blk. 44, Sur. ..... T.D. 3,251 ft; to shoot.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... S.D. 400 ft.
Chambers et al's No. 1 Herring, CNL, Sec. 20, Blk. 8, G.C.&S.F. Sur. ..... Running 10-in. csg. 3,025 ft.

PARMER COUNTY

Magnolia Pet. Co.'s No. 1 Wilson, 330 ft. from N and W, SE, Sec. 73, H. Kelly Sur. ..... Drlg. 2,770 ft.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur. ..... Drlg. 2,660 ft.
Travis et al's No. 1 Cunningham, 330 ft. S and W, Sec. 74, Blk. M-2, H.&G.N. Sur. ..... S.D. 2,690 ft.

WHEELER COUNTY

Clarity et al's No. 1 Porter, 330 ft. S and W, SE, Sec. 2, Blk. A-9, H.&G.N. Sur. ..... Ran 6-in. csg. 2,235 ft.
Devore & Robinson's No. 1 Sitter, 2,310 ft. from S and E of E½ of Sec. 33, Blk. 24, H.&G.N. Sur. ..... Estimated 80,000,000 ft. gas; T 2,263 ft; drlg. plug.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 27)

Texas Inland and Zingling's No. 1 Wm. Flannigan, 340 ft. from E and 165 ft. from W line of S 20 acres of SW Sec. 20, B.B.B.&C.R.R. Sur. ..... Spudded.

GARZA COUNTY

Penny & Posey's No. 1 Justice, 1,980 ft. from S and 1,650 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... Fishing for 6⅝-in. csg., T.D. 320 ft.

HOWARD COUNTY

Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W Sec. 14, Blk. 20, Twp. 1s, T.&P. Sur. Spudded and S.D.
L. C. Harrison et al's No. 1 L. C. Denman, 2,310 ft. from S line and 330 ft. from E line of Sec. 10, T.&P.R.R. Sur., Blk. 30 ..... Drlg. 2,235 ft.

IRION COUNTY

Davis et al's No. 1 Suggs, 1,560 ft. from S and 925 ft. from W Sec. 3,081, Blk. 28, H.&T.C. Sur. ..... Running 8¼-in. casing 5,827 ft.
Ellis Flanery Corp.'s No. 1 Nutt, 1,350 ft. from N and 450 ft. from E of Sec. 694, Kheikenhoim Sur. ..... Drlg. 3,135 ft.
Stanolind Oil & Gas Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... Rigged up rotary 6,795 ft.
Straughn & Adkins Bros.' No. 1 Lee, 1,980 ft. from W and 420 ft. from N of Sec. 739, C. Kaiser Sur. ..... Total depth 1,135 ft.; underreaming 8¼-in. casing.

JONES COUNTY

Johnson's No. 1 Huddleston, 165 ft. from S and W of N half of N half of Sec. 39, Blk. 18, T.&P. Sur. .... Rig up.
Young et al's No. 1 Harrell, 150 ft. from S and E of N half of Sec. 8, O.A.L. Sur. ..... Location.
Abers et al's No. 1 Burton, 150 ft. from S and 175 ft. from E of 43.4-acre tract in G. Martines Sur. ..... S.D. 1,005 ft.; temporarily abandoned.

LOVING COUNTY

Adams et al's No. 1 Wheat, 330 ft. from SE and SW of Sec. 89, Blk. 1, W.&N.W. Sur. ..... Spudding.
Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S Sec. 46, Blk. 53, T.&P. Sur. ..... S.D. 810 ft.
Slack's No. 1 Lynd, 990 ft. NE and 330 ft. SE of Sec. 3, Blk. 2, W.&N.W. Sur. ..... Shut down 4,044 ft.
Falbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW Sec. 79, Blk. 32, H.&T.C. Sur. ..... S.D. 2,500 ft.
Lewis & Siegel's No. 1 Johnson, 330 ft. from N and 1,650 ft. from W Sec. 8, Blk. 56, Twp. 1, T.&P. Sur. .. Shut down 250 ft.
Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... S.D. 2,385 ft.
Phillips Pet. Co.'s No. 3 Wheat, 330 ft. from SW and 2,310 ft. from SE Sec. 85, Blk. 1, W.&N.W. Sur. .... Building rig.
Tennant et al's No. 1 Martin, 990 ft. from NW and SW Sec. 66, Blk. 1, W.&N.W. Sur. ..... Drlg. 4,015 ft.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 300 ft. from S cor. Sec. 133, E.L.R.R. Sur. ..... S.D. 2,360 ft.

PECOS COUNTY

Anderson's No. 1 Le Fever, 330 ft. from N and W of Sec. 73, Blk. 8, H.&G.N. Sur. ..... Fishing 1,255 ft.
Cardinal Oil Co.'s No. 1 J. H. Tippett ("J"), 1,980 ft. from the S line and 990 ft. from the W line of Sec. 3, D. F. Robertson Sur. ..... Shut down 675 ft.
Dittman's No. 1 Sanford, 330 ft. from NW and 1,650 ft. from NE of Sec. 55, Blk. 10, H.&G.N. Sur. ..... Shut down 725 ft.
Slaughter et al's No. 1 Sun Yates, 60 ft. S of Sun Oil Co.'s No. 1 Yates, Sec. 59, Blk. 1, I.&G.N. Sur. ..... Material.

REAGAN COUNTY

Big Lake Oil Co.'s No. 6-C University, 1,370 ft. from S and 1,000 ft. from E Sec. 12, Blk 2 ..... Total depth 4,810 ft.; fishing

REEVES COUNTY

Cunningham et al's No. 1 Wright, 1,320 ft. from S and W Sec. 58, Cassel's Sur. ..... Shut down 75 ft.
F. McDorman et al's No. 1 Ray Roberts et al, 2,310 ft. from S and E lines of Sec. 22, Blk. 59, P.S.L. Sur. .... Shut down 105 ft.
James & Milton's No. 1 Patterson, 330 ft. from N and W of Sec. 21, Blk. 73 ..... Shut down 3,320 ft.; to set 6⅝-in. casing.
Lee O. White et al's No. 1 Hershenson, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur. .. S.D. 5,044 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 519 ..... Drlg. 3,446 ft.; show oil 3,427-3 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... Shut down 4,500 ft.; trying land 6-in. casing.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... Drlg. 5,297 ft.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,570 ft. from W, G.H.&S.A. Sur. ..... S.D. 5,053 ft.

SCURRY COUNTY

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 3, H.&T.C. Sur. ..... S.D. 5,041 ft.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W Sec. 68, Blk. 3, H.&G.N. Sur. ..... Spudded and S.D.
Seifert & Dibbie's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... Shut down 2,740 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M-K-T Sur. ..... S.D. 2,669 ft.

Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... Shut down 3,150 ft.
Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ..... S.D. 120 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S Sec. 26, Blk. 161, G.C.&S.F. Sur. .. S.D. 6,120 ft.
Jones et al's No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... S.D. 2,545 ft.
Sides et al's No. 1 Phelps, 2,157 ft. from N and 2,482 ft. from W Sec. 5, G. W. Turley Sur. ..... Shut down 480 ft.

TOM GREEN COUNTY

Andrews' No. 1 Pugh, 250 ft. from N and 5,184 ft. from E, James Eldridge Sur. No. 73 ..... Shut down 453 ft.
Belding & Dutton's No. 1 Norsworthy, 1,640 ft. from S and 557 ft. from E of John McNeese Sur. ..... S.D. 760 ft; S.O. and gas 735 ft
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur..... S.D. 1,994 ft.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ..... S.D. 200 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... S.D. 5,360 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... S.D. 6,780 ft.

WARD COUNTY

Abell Bros.' No. 1 Sloan, 330 ft. from NW and NE Sec. 24, Blk. 5, H.&T.C. Sur. ..... Drlg. 1,205 ft.
Bradford-Bentley's No. 1 Beatty, 330 ft. from SW and NW of Sec. 3, Blk. 24, H.&T.C. Sur. ..... Drlg. 1,180 ft.
Alpine Oil & Dev. Co.'s No. 4 J. F. Boogher, 150 ft from SE line and 150 ft. from the SW line of Tract 16, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Top pay 2,338 ft.; shut down 2,595 ft.; initial prod. 40 bbls. day.
Eppenauer's No. 1 Purcell, 365 ft. from SW and 1,650 ft. from SE of Sec. 17, Blk. 24, H.&T.C. Sur. ..... Drlg. 1,475 ft.
H. V. Greer's No. 1 Carr, 150 ft. from NW and 510 ft. from SW Sec. 12, Blk. 5, H.&T.C. Sur. ..... Drlg. 410 ft.
Gulf Prod. Co.'s No. 9 Hutchings, 330 ft. from N and 1,650 ft. from W of S 370 acres of Sec. 5, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 2,605 ft.; oil show 2,590 ft.
Gulf Prod. Co.'s No. 20 O'Brien, 1,870 ft. from N and 330 ft. from E Sec. 16, Blk. F, G.M.M.B.&A. Sur. .... Drlg. 970 ft.
Moran & Burkhart's No. 2 J. T. Sweatt et al, 3,810 ft. from the NE line and 1,170 ft. from the NW line of Sec. 12, Blk. 5, H.&T.C. Sur. ..... Shut down 821 ft
Moran & Miles' No. 1 Boogher, 3,603 ft. from NE and 1,303 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. ..... Shut down 820 ft.
R. F. Owen's No. 1 Lee, 1,344 ft. from NW and 4,532 ft. from SW Sec. 1, J. Howe Sur. ..... Shut down 560 ft.
Prairie Oil & Gas Co.'s No. 2 Edmonson, 330 ft. from NW and SW of Sec. 23, Blk. 5, H.&T.C. Sur. ..... Drlg. 1,545 ft.
Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E. Sec. 22, Blk. A, G.M.M.B.&A. Sur. ..... S.D. 3,402 ft
Sudderth & Carey's No. 1 J. H. Boogher et al, 150 ft. from SW and SE lines of Lot 24, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Shut down 290 ft.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Total depth 4,666 ft.; set 4½-in. casing at 4,550 ft.
Stanolind Oil & Gas Co.'s No. 1 Cannon, 3,300 ft. from SE and 1,649 ft. from NE Sec. 29, Blk. B-29 ..... Cellar.
Stanolind Oil & Gas Co.'s No. 1 Weiss, 300 ft. from NW, 300 ft. from NE of S 100 acres, Sec. 4, Blk. 34 ..... Drlg.
White et al's No. 1 Burtner, 150 ft. from NE and 515 ft. from SE of Sec. 8, Blk. 32, H.&T.C. Sur. ..... S.D. 755 ft.

WINKLER COUNTY

Liner Drlg. Co.'s No. 1 Campbell, 350 ft. from N and E cor. Sec. 2, Blk. B-5 ..... S.D. 4,640 ft
Richardson's No. 1 Sealy, 330 ft. from S and W of Sec. 92, Blk. A, G.M.M.B.&A. Sur. ..... Drlg. 1,175 ft.
Sid Richardson's No. 1 S. M. Halley, 330 ft. from the S line and 1,650 ft. from the E line, Sec. 25, School Blk. B-12 ..... Driving 15½-in. at 100 ft.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 32)

Lincoln Oil Co.'s No. 1 Barrow, Jesse DeVore Sur., 50 ft. from N line and 31 ft. from E and W lines 37-acre tract ..... Rig.
Republic Prod. Co.'s No. 89-A Dolbear, Jesse DeVore Sur., 25 ft. W of No. 89 ..... Drlg. 2,456 ft.
Weneedan Oil Co.'s No. 2 Palmer, Chas. Underton Sur.. No report.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 34 Taylor, James Hamilton Sur. No. 52, 141 ft. S of NW cor. of J. W. Howe 130-acre tract and 430 ft. W at right angles ..... Drlg. hard shale 3,692 ft.
Humble Oil & Ref. Co.'s No. 1 Hooks, James Hamilton Sur. No. 52, 904 ft. N of SW cor. along W line of lease and 396 ft. E at right angles ..... Drlg. shale 1,896 ft.
Isaacs & Carwile's No. 1 Settegast (W.O.) ..... Gumbo and lime 3,208 ft.; fishing.
Navarro Oil Co.-Texas Exp. Co.'s No. 16 Dooley (W.O.), J. Hamilton Sur., 50 ft. from W line and 487 ft. from S line tract ..... Pulling screen to deepen 4,665 ft.
Rio Bravo Oil Co.'s No. 10-A Settegast (W.O.), Jos. Kopman Sur. No. 44, 1,200 ft. S and 350 ft. W of NE cor. of lease ..... Temp. abd.
Rio Bravo Oil Co.'s No. 12-A Settegast, (W.O.), J. Kopman Sur., 1,410 ft. from N line and 656 ft. from E line ..... Rigging up to deepen 5,404 ft.
Rio Bravo Oil Co.'s No. 18-A Settegast, J. Kopman Sur. (W.O.) ..... Drlg. oil sand and shale 5,554 ft.
Rio Bravo Oil Co.'s No. 23-A Settegast, Jos. Kopman Sur. No. 44, 1,375 ft. S and 200 ft. W of NE cor. "A" lease ..... Derrick.

BLUE RIDGE—FORT BEND COUNTY

Teichaw and Cady's No. 1 Blakely (W.O.) ..... Cored sandy shale showing oil 2,580-2,615 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 20 Cade, N. Fitzsimmons Sur., 161 ft. W of No. 15 and 146 ft. SW of No. 17 ..... Shut down 60 ft.
Yount Lee Oil Co.'s No. 24 Cade, 1,010 ft. from NE line and 1,250 ft. from NW line of N. Fitzsimmons Sur... No report.
Yount Lee Oil Co.'s No. 25 Cade, N. Fitzsimmons Sur., 100 ft. due W of No. 23 ..... No report.

DAMON MOUND—BRAZORIA COUNTY

Intercoastal Oil Co.'s No. 6 Wisdom (D.D.), A. Darst Sur., Blk. 51, 2,550 ft. from NE line and 1,150 ft. from NW line of 840-acre tract ..... T.D. 3,480 ft; sidetracked at 2,750 ft; drlg. shale and lime 3,050 ft.
The Texas Company's No. 1 Cave heirs, 75 ft. SW, 150 ft. SE at right angles from N cor. of Lot A, Blk. 73, Wisdom Subd., A. Darst League ..... Drlg. shale 3,502 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 21 Moore, 3,816 ft. S and 2,432 ft. W of NW cor. of James Frazier Sur. in Mark Smith Sur. ..... Sticky shale 3,650 ft.

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THOMPSON—FORT BEND COUNTY

Cullen & West and Gulf Prod. Co.'s No. 1-A Lockwood & Sharp (D.D.), John Rabb Sur. ..... Total depth 4,807 ft., blew out around 4,500 ft.; derrick and rig destroyed; standing.

Cullen & West and Gulf Prod. Co.'s No. 4-A Lockwood Sharp, J. Rabb Sur., 550 ft. W of No. 2-A ..... Derrick.

Gulf Prod. Co.'s No. 1 Mary D. Booth Meyers, J. Rabb Sur., 800 ft. N of Cullen & West's No. 2-A Lockwood & Sharp ..... Set 5 joints 4½-in. screen 5,240 ft.; completed flowing 3,200 bbl. P.L. oil, 400 lbs. pressure; ¾-in. choke.

Gulf Prod. Co.'s No. 2 Mary D. Booth Meyers, J. Rabb Sur., 600 ft. E of No. 1 in center of tract ..... Rig.

NASH—BRAZORIA COUNTY

Harrison & Abercrombie's No. 15 Nash (D.D.), Thos. Alsbury League ..... Shale 6,035 ft.; fishing drill stem.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 125-A Cotton ..... T.D. 515 ft; cmtd. csg.

MARKHAM—MATAGORDA COUNTY

Deering & Newman's No. 1 Hawks (W.O.), W. H. Gayner Sur., 200 ft. from S line and 100 ft. from E line of tract ..... No report.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 6 Lost Lake, 2,381 ft. W and 289 ft. S of No. 5 in Lost Lake ..... Anhydrite 6,169-6,205 ft; drill stem stuck; abd.

Pure Oil Co.'s No. 14 Mayes, E. H. R. Wallis Sur., 650 ft. due E of No. 11 in line with No. 9 ..... Spudded.

MOSS BLUFF—LIBERTY AND CHAMBERS COUNTY

Gulf Prod. Co.'s No. 4 McFaddin, J. McFaddin Sur. ..... Drlg. sticky shale 7,131 ft.
Manning Trust Co.'s No. 2 Sergent, Jas. McFaddin Sur. .. Cap rock 883-88 ft.

REFUGIO—REFUGIO COUNTY

Larco Gas Co.'s No. 4 Strauch heirs, 150 ft. from N line and 150 ft. from W line, Lot 6, Blk. 2 ..... Topped sand showing oil 3,686 ft. cem. 6⅝-in. casing.

Moody Seagraves Prod. Co.'s No. 2-A St. John, Refugio town tract, 600 ft. E of No. 1-A and 300 ft. from N line of lease ..... Pulling liner and screen to deepen 5,518 ft.

United Prod. Corp.'s No. 2-A W. J. Fox, Wm. Hews and L. Brown Sur., 2,099 ft. NE along SE line from SE cor. of lease, thence 1,690 ft. NW at right angles ... Sand showing oil 6,464-74 ft; cmtd. 5½-in. csg. 6,464 ft.

SOUTH LOUISIANA FIELDS
LOCKPORT—CALCASIEU PARISH

Vacuum Oil Co.'s No. 8 Farquahar (W.O.), Sec. 9-10s-9w.. Oil sand 5,624 ft.
Vacuum Oil Co.'s No. 32 Miller, 925 ft. E and 480 ft. S of NW cor. S half of NW of Sec. 9-10s-9w ..... Sand 4,372-73 ft; set 1 joint screen; completed flowing 1,000 bbls.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 10 Housierre-Latrielle, 5,435 ft. E and 1,070 ft. N of SW cor., Sec. 47-9s-2w ..... Shale 8,131 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 23 Watkins (W.O.), 2,495 ft. W and 132 ft. N of SE cor. Sec. 13-12s-10w ..... Rig up to deepen 2,844 ft.
Calcasieu Oil Co.'s No. 31 Watkins, 1,402 ft. W and 1,120 ft. N of SE cor. of Sec. 13-12s-10w ..... Drlg. sandy shale 2,950 ft.
R. E. Seiss' No. 3 Vincent, 2,195 ft. S and 1,320 ft. W of NE cor. Sec. 30-12s-10w ..... Location.
R. E. Seiss' No. 2 J. M. Vincent ..... Shut down 2,163 ft.
Yount Lee Oil Co.'s No. 44 State, 1,110 ft. N and 1,915 ft. W of SE cor. Sec. 13-12s-10w ..... Location.
Yount Lee Oil Co.'s No. 45 State, 1,320 ft. N and 510 ft. W of SE cor. Sec. 13-12s-10w ..... Location.
Yount Lee Oil Co.'s No. 46 State, 1,320 ft. N and 1,330 ft. W of SE cor. of Sec. 13-12s-10w ..... Gumbo 3,044 ft.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 9 Gray (D.D.) ..... Coring sand showing oil 3,114 ft.

EDGERLY—CALCASIEU PARISH

Emerson et al's No. 14 Hunter, 1,100 ft. N of NE cor. Bright Penn lease, 850 ft. E of No. 10, Sec. 21-9s-11w. Drlg. shale 4,025 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 722 fee (W.O.), Sec. 29-9s-10w... Drlg. gumbo and lime 4,486 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 5 Sweet Lake (D.D.), Sec. 12-13s-8w... Coring sand and shale 7,185 ft.

MISCELLANEOUS WILDCATS
TEXAS
AUSTIN COUNTY

O'Hara Oil & Gas Co.'s No. 1 Nellous, J. C. Cummings Hacienda Sur., 650 ft. N of No. 1 Schroeder in 18-acre tract, north edge Mill Creek ..... Derrick.
Pomacal & Boletka's No. 1 Schebajan, 329 ft. N, 78 deg. E of N cor. B. Dottery Sur., near center of SW line of S. F. Austin 4 League on west fork of Mill Creek .. Set 10-in. casing 120 ft.

BRAZORIA COUNTY

W. D. Southerland's No. 1 C. W. Chapman, 394 ft. from S line and 104 ft. from E line of Lot 2, Andrew Robinson Sur. ..... Standing 1,514 ft.
The Texas Company's No. 2 Belcher, Harvey N. Little Sur., 1,728 ft. southeasterly from N cor. of S half of Sur., along NE line and thence 123 ft. at right angles ..... Drlg. rock 2,838 ft.
United Oil Syndicate's No. 1 Levitt, 900 ft. from W line and 400 ft. from S line of John Peake Sur. ..... Total depth 1,594 ft. in gumbo; drill stem stuck.

BURLESON COUNTY

Marek & Son's No. 3 A. Marek, N. McFaddin Sur., 1,068 ft. N and 225 ft. W of SE cor. of tract ..... Standing 2,210 ft.
M. O. & T. Corp.'s No. 1 Rigers ..... No report.

FORT BEND COUNTY

Stone & Wyman's No. 1 Beard, H.&T.C. Sur. No. 1⅛, 1,150 ft. from NW line and 1,892 ft. from NE line ... T.D. 1,375 ft; sidetracked at 750 ft.; drlg. 975 ft.

GRIMES COUNTY

Rianjo Oil Co.'s No. 2 Cuthrell, Pat B. O'Connor Sur., C of 110-acre tract ..... S.D. 3,534 ft.

HARRIS COUNTY

Givens & Daybault's No. 1 Lobit, David Middleton Sur., Blk. 19, Lobit Subd. ..... Drlg. hard broken shale and lime 2,733 ft.

Hewitt & Shibe's No. 1 Dan Wise, W.C.R.R. Sur., Sec. 11, 100 ft. out of SE cor. 149.33-ac. tract ..... Rig.
Louisiana Oil & Dev. Co.'s No. 1 J. W. Wilson, W. Ritchie Sur. ..... Shut down 420 ft.
Shubert & Alexander's No. 1 Herman Hale, 1,053 varas E of NW cor. R. A. Hanks Sur., thence 790 varas S and thence 70 varas W 74 deg. ..... Shut down for fuel 2,620 ft.

JASPER COUNTY

Hext Drlg. Co.'s No. 1 Flourney, B. F. Jones Sur., 600 ft. NW of Helmerich & Payne's No. 1 Flourney ..... No report.

JEFFERSON COUNTY

Brown et al's No. 1 M. O. Todd, 200 varas S and 55 varas E of NW cor. of Wm. Carr Sur. ..... Derrick.
John I. Tipkin and Elam's No. 1 Broussard, McCaffey Sur., 800 ft. from S line in center E and W of 205-acre tract ..... Shut down 904 ft.
Texas Gulf Sulphur Co.'s No. 1 Junker, W. H. Smith League, 100 ft. S and 1,000 ft. W of NE cor. of tract.. Sulphur test.
Texas Gulf Sulphur Co.'s No. 1 Thomas Fannett, Wm. Smith Sur., 1,950 ft. W, 1,600 ft. S of NE cor. of Thomas' 446-acre tract ..... Sulphur test.
Westbury Oil Co.'s No. 4 West, 450 ft. W and 4,210 ft. S of NE cor. of T. D. Yoakum Sur. ..... Shut down in gumbo 600 ft.

LIBERTY COUNTY

Hamm et al's No. 1 Harvard, Davis Hill ..... Gumbo 1,015 ft.; shut down.

MATAGORDA COUNTY

United North & South Oil Co.'s No. 1 Stoddard, J. C. Keller Sur., 150 ft. W and 545 ft. N of SE cor. Blk. 53, Buckeye townsite ..... Drlg. shale 5,991 ft.
Harvey Smith's No. 1 Baker (Citrus Grove), J. V. Criswell Sur., Ro bins Subd., 2,000 ft. S and 2,000 ft. E of NW cor. of Lot 14 and Lot 15 ..... Drlg. sticky shale 6,175 ft.

MONTGOMERY COUNTY

Pevehouse Oil Co.'s No. 1 Sealey, Jas. Pevehouse Sur., 1,575 ft. N of N line of Horton & Woodson's 1,562-acre tract and 2,226 ft. E of W line of H.&W. 1,870-acre tract ..... Drlg. shale 2,405 ft.

NEWTON COUNTY

R. T. Briscoe et al's No. 1 Joe Inman, approx. 1,900 ft. E and 500 ft. N of SW cor. of J. M. Scott Sur. ..... Fishing drill stem 1,300 ft.

ORANGE COUNTY

Altex Oil Co.'s (Veteran Oil Co.) No. 1 Reed, A. Nelson Sur. No. 1, 500 ft. from N line and 250 ft. from E line of tract ..... T.D. 4,063 ft; drlg. sidetracked hole 2,900 ft.
Crew Oil Co.'s No. 1-A Mansfield, 50 ft. E of No. 1 ..... T.D. 2,060 ft; drlg. sidetracked hole 1,600 ft.

POLK COUNTY

Freeman et al's No. 2 Freeman ..... Shut down 3,162 ft.
T. B. Hoffer's No. 1 Saner-Ragly Lbr. Co., 300 ft. out of most northerly cor. of most easterly County School Land Abst. 271 ..... Shut down 1,517 ft.

REFUGIO COUNTY

Blanco Creek Oil Co.'s No. 1 Damaan, 150 ft. from N line and 150 ft. from W line of Blk. 14, Bonnie View Ranch Subd. ..... Shut down 4,627 ft.
J. C. Dixon's No. 1 Peck, 450 ft. S, 150 ft. E of NW cor. of S half of Sec. 24, Bonnie View Ranch Subd., Estaban Lopez Sur. ..... Cem. 12¾-in. casing 100 ft. standing.
Humble Oil & Ref. Co.'s No. 2 O'Connor, John Keating Sur., 933 ft. N, 20 deg. E of No. 1 ..... Derrick.

SAN JACINTO COUNTY

E. P. Edwards' No. 1 J. R. Bennett, Cold Springs ..... Shut down 750 ft.

TRINITY COUNTY

Scientific Producers Co.'s No. 1 Thompson, I.&G.N. Sur. No. 47, 50 ft. out of NE cor. of E. K. Thompson 199-acre tract ..... S.D. for repairs 1,191 ft.

TYLER COUNTY

King Oil Co.'s No. 1 Caswell ..... Sand and shale showing oil 1,191 ft.; cem. 6-in. casing 1,218 ft. standing.
Allied Pet. Co.'s (Texas Southern Pet. Co.) No. 3 Wilson, Mrs. E. Cherry Sur. No. 798, 1,500 varas from W line and 600 varas from N line ..... Shut down 5,025 ft.

VICTORIA COUNTY

Bunte et al's No. 1 Keeran, 3,714 ft. NE along railroad from SW line of Martin DeLeon Sur., and thence 1,600 ft. NW at right angles ..... Cored sand showing oil 5,183-9 ft; to make D.S. test.
Houston Oil Co.'s No. 1 Conrad, T.&N.O. Sur. No. 1, 1,100 ft. from SW line and 100 ft. from NW line .... Heaving shale 5,290 ft.; cem. hole to 4,656 ft.
The Texas Company's No. 3 McFaddin, S 15 deg. W 6,200 ft. and N 75 deg. W 1,850 ft. out of NE cor. John M. Rine Sur. ..... Sand 5,827-35 ft; set 18 ft. 4½-in. screen; completed flowing 700 bbls. P.L. oil; ¾-in. choke; tubing pressure 1,250 lbs.; csg. pressure 1,075 lbs.

WALKER COUNTY

Hart Oil Co.'s No. 1 Thompson Lbr. Co., Jose Ortega Sur., 1,265 ft. S, 1,876 ft. W of SW cor. of J. B. Gibson's 71-acre tract ..... Drlg. 1,850 ft.
McDaniel and associates' No. 1 Citizens State Bank, B.B.B.&C. Sur., C of 150-acre tract ..... No report.

WASHINGTON COUNTY

Moon & Yeager's No. 1 Hahn, 500 ft. from N line and 1,852 ft. from W line of J. H. Alcorn Sur., Abst. 3.. Temp. abd. 3,635 ft.
Penn-Tex Oil Co.'s No. 2 Kamah Brenham, S. M. Williams Sur. ..... Lime and anhydrite 3,550 ft.; shut down.

SOUTH LOUISIANA
ASCENSION PARISH

McElroy Pet. Co.'s No. 3 Lacey, 150 ft. S, 150 ft. W of NE cor. of Sec. 29-10s-4e ..... Shut down 4,515 ft.

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... Shut down 875 ft.
I. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Standing 6,568 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... Shut down 3,650 ft.
Success Oil Co.'s No. 1 Hewitt, 90 ft. out of SW cor., Sec. 11-9s-11w ..... Rig.

EVANGELINE PARISH

Emile LeDeau's No. 1 Vidrine, 260 ft. W and 350 ft. S of NE cor. of Sec. 47-3s-2e ..... Rig.

IBERIA PARISH

Jefferson Lake Oil Co.'s No. 26 Lake Peigneur, Sec. 58-12s-5e, 950 ft. N, 72 deg. 6 min. W of No. 8 ..... Sulphur test.

IBERVILLE PARISH

Standard Oil Co.'s No. 3 Myrtle Grove-Wilbert, Bayou Choctaw, 2,040 ft. N and 600 ft. W of C of Sec. 52-9s-11e ..... Rig.
Standard Oil Co.'s No. 2 Gay, Bayou Choctaw, 4,500 ft. N and 600 ft. E of SW cor. SE of Sec. 52-9s-11e ..... Drlg. 2,420 ft.
Standard Oil Co.'s No. 7 Schwing, Bayou Blue, 1,359 ft. N and 1,856 ft. E of C of Sec. 74-9s-10w ..... Formerly temp. aband. 1,350 ft.; preparing to resume drilling.

LA FOURCHE PARISH

State Prod. Co.'s No. 1-B Stark, 1,931 ft. E and 1,540 ft. S of NW cor. of Sec. 71-15s-15e ..... Sulphur test.
State Prod. Co.'s No. 1-C Stark, 210 ft. S and 140 ft. E of NW cor. of Sec. 71-15s-15e ..... Sulphur test.

PLAQUEMINES PARISH

Humble Oil & Ref. Co.'s No. 5 Cockrell-Moran, Lake Grand Ecaille, 10,377 ft. N and 2,614 ft. W of NE cor. of Twp. 21s-26e ..... Location.
Humble Oil & Ref. Co.'s No. 7 Cockrell-Moran, Sec. 14-20s-26e, 400 ft. S of No. 4 ..... Dredging canal to location.

POINTE COUPEE PARISH

Grand Bay Oil & Gas Co.'s No. 1 Moniotte, 10,140 ft. S and 13,450 ft. E of NW cor. Twp. 5s-11e in Sec. 94... Shut down 310 ft.

TERREBONNE PARISH

La. Gas & Fuel Co.'s No. 2 Minor, 1,480 ft. S and 1,980 ft. E of NW cor. Sec. 3-18s-14e ..... Cored sand showing gas 3,878-81 ft.; cem. casing 3,878 ft.; drilled plug and made drill stem test showing 50,000 ft. gas and salt water; recemented casing.
The Texas Company's No. 5 State, Dog Lake, 2,270 ft. S and 450 ft. E of NW cor. of Sec. 5-22s-16e ..... Location.
The Texas Company's No. 4 La.L.&E., Bay Junop ..... Location.
The Texas Company's No. 5 State, Lake Pelto, 1,505 ft. N and 1,539 ft. W of SE cor. of Sec. 5-23s-18e ..... Waiting rig.
The Texas Company's No. 10 State, Lake Barre ..... Location.
The Texas Company's No. 12 State, Lake Barre ..... Location.
The Texas Company's No. 14 State, Lake Barre ..... Location.
The Texas Company's No. 1 La.L.&E., Lake Barre, 2,645 ft. S and 596 ft. E of NW cor. Sec. 36-21s-20e ..... Drlg. shale 2,390 ft.

VERMILLION PARISH

Pure Oil Co.'s No. 2 Alliance Trust Co., Guyvian, 1,875 ft. E and 980 ft. S of NW cor. of Sec. 24-11s-1w ..... Rig.

WEST FELICIANA PARISH

Putnam Syndicate's No. 1 Como Plantation, Sec. 51-1s-4w. No report.

Brief Items for Petroleum Refiners

Oiled Roads Cost One-Thirteenth as Much as Concrete

OKLAHOMA CITY, Okla., Jan. 4.—Thirteen and one-half miles of oiled road costs no more than a mile of concrete road, according to A. R. Losh, manager of road oil and asphalt sales for the Anderson-Prichard Oil Corp., and formerly state highway engineer for Oklahoma. In describing a series of road oil tests being conducted by the state, Mr. Losh said:

"The Oklahoma Highway Commission has just recently completed an oiled road on Highway 66 for test purposes. This experiment is located between Geary and El Reno. It is 14½ miles long and 11 different types of Oklahoma oil were used in this construction. It will be of great value to the Highway Commission and Oklahoma engineers for determining in some measure the real value of different grades of oil. It will also solve the maintenance problem on this important highway for several months to come. At the present time Highway 66 is an all-weather road entirely across the state. Had this gap of 14½ miles been left unimproved, it would have been a serious barrier. As it is, the public has all the advantages of a paved road at a very low cost. The completed road cost $1,635 per mile. Traffic on this road is estimated at 2,500 vehicles per day. It would have been impossible to have maintained an unbound gravel road or a dirt road under this traffic.

The Highway Commission constructed an oil-gravel mat 1½ inches thick and 20 feet wide. Oil was also placed on the shoulders so that the 30-foot roadbed is given an oiled roof which affords excellent drainage. As long as this condition is maintained and the surface is kept smooth, traffic will have all the advantages of a paved road.

"While the road is only two months old, there is already evidence which indicates failure of the short section where very light crude oil is used. The other sections are all uniformly good, although some sections are slightly better than others.

"The 14½ miles of oil-gravel road cost $23,771.59. The state also built immediately east of this oil road, 8.4 miles of concrete slab which cost $187,196.15. One mile of the concrete road cost as much as 13½ miles of the oiled road. To get a true comparison of the value of the two expenditures, one should travel 12½ miles of unimproved dirt road, 1 mile of concrete road, and then travel 13½ miles of the oiled road. This is a practical experiment anybody can conduct to his own satisfaction. For example, assume the state has $22,242 of road money to spend. This was the cost of 1 mile of the concrete pavement. Which will give the road user a greater value, 1 mile of concrete, or 13½ miles of oil-gravel road? It is true that year after year the concrete road would have the lesser maintenance cost, but it must be remembered that the investment in the concrete road would have an interest charge of $1,334.52 per mile at 6 per cent. This is enough money to maintain 5 miles of the oiled road for a year.

"In building the oil road the cost of the 14½ miles was as follows:

Oil	$ 4,896
Freight	3,506
Local sand and gravel	11,022
Labor and equipment	4,346
Total	$23,770

"Local material, labor and equipment were the big items of expense. The oil is the only part which will have to be renewed, and this should not be more each year than half the original cost of the oil."

CORRECTIVE FORCES ARE AT WORK SAYS PRESIDENT W. C. TEAGLE

NEW YORK, Jan. 4.—"Final figures will probably show a total supply of crude oil and products in the United States of approximately 987,000,000 bbls. for the year 1931," according to W. C. Teagle, president of Standard Oil Co. (New Jersey). "The total supply in the previous year was 1,064,000,000 bbls. There is expected as of December 31 a reduction in the stocks of crude and products on hand of 43,000,000 bbls. This is a record draft on stocks for any year and the first ever accomplished during a depression," he declared.

"The achievement is the more remarkable in as much as it occurred so soon after the discovery of three of the largest producing fields the country has ever boasted, East Texas, Oklahoma City and Kettleman Hills. More than half of the reduction was accounted for by the two months of the shutdown under martial law in Oklahoma City and East Texas.

"However, there has been in earlier years a great deal of drilling done, with the result that there is now shut-in production in this country conservatively estimated at 3,000,000 bbls. a day, with another 300,000 bbls. in South America and a like amount in other parts of the world. This shut-in production is to some extent interchangeable with stocks aboveground, as much of it may be drawn upon if additional outlets develop. Both the shut-in production and excessive stocks are a depressing influence on the market, which have prevented the industry from obtaining a satisfactory return on its investment.

"The industry curtailed drilling in 1931, completing 11,000 wells against 21,000 in 1930 and an average of 25,000 a few years before. The effect of surplus production and stocks was felt in both crude and gasoline prices, which reached record lows at one time in 1931. The average crude oil price for the year was 63½ cents a barrel for 36° gravity Mid-Continent crude.

"There was a loss of slightly more than 5 per cent in the total consumption and exports of petroleum, this following a decrease of 1.83 per cent in the year previous. About 75 per cent of the industry's revenue in normal times is derived from gasoline sales, the total demand for which rose from 123,000,000 bbls. in 1920 to 464,000,000 bbls. at the end of the decade. In the meantime, gasoline stocks increased from 11,000,000 bbls. in 1920 to 40,500,000 bbls. at the close of 1930 and they were 39,000,000 bbls. on December 19 last. This is a larger quantity than there is any justification for carrying over the winter period of minimum demand.

"On the favorable side, the industry did remarkably well through proration to hold production down when there was so much available. There is a greater degree of recognition today on the part of the industry of the waste both to itself and to the public that accompanies overproduction of crude and products.

"Earnings have, of course, been unsatisfactory in this industry as in others and promise to continue so until crude production and refinery runs can be held down to current market demands. A better understanding of the fundamental causes of the industry's position has put into play forces for their ultimate correction.

"One of the most potent possibilities in improving conditions in the future lies in unit development of pools. Flush fields of the future should for the most part be unit developed, thereby making it possible to hold their production down to requirements. Unification is not universally possible because of royalty and leasehold restrictions, but the trend is toward a common development of flush pools and this should do much to stabilize supply and demand."

IMPORTS OF PETROLEUM SHOW MORE RAPID FALL THAN EXPORTS IN 1931

By C. E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Jan. 4.—The fact that imports of petroleum and products decreased more rapidly during 1931 than exports is seen by the monthly summary of the Bureau of Foreign and Domestic Commerce for November and the 11 months ending with November.

Domestic imports of petroleum and products declined in value from $9,491,528 in November, 1930, to $5,010,725 in November, 1931, and for the 11 months ending with November from $135,273,885 in 1930 to $86,613,313 in 1931.

The value of exports of these same products decreased from $27,852,160 in November, 1930, to $21,476,492 in the same month of 1931, and for the 11 months ending in November from $464,335,420 in 1930 to $254,661,582 in 1931.

During November, 1930, crude imports totaled 4,467,188 bbls. valued at $4,532,354, declining to 3,603,573 bbls. valued at $2,469,033 in November, 1931. During the 11-month period of 1930 the imports totaled 57,402,340 bbls. valued at $60,075,336, declining to 42,934,363 bbls. valued at $35,885,211 in the same period of 1931. The bulk of these imports came from Venezuela.

Crude exports in November, 1930, totaled 1,765,205 bbls. valued at $1,968,715, declining to 2,449,215 bbls. valued at $2,133,790 in November, 1931. For the 11-month period crude exports increased from 22,365,495 bbls. valued at $30,620,067 in 1930 to 24,464,487 bbls. valued at $19,877,406 in 1931, showing a small increase in quantity but a heavy decrease in value.

Crude Shipments to Japan

Exports of crude oil to Japan in November, 1930, totaled 320,176 bbls., increasing to 401,951 bbls. in November, 1931, and in the 11-month period increasing from 2,728,011 bbls. in 1930 to 3,289,754 bbls. in 1931.

Advanced and refined oil imported in November, 1930, totaled 2,794,276 bbls., decreasing to 2,555,421 bbls. in November, 1931. In the 11-month period this class of imports dropped from 40,082,355 bbls. in 1930 to 35,822,059 bbls. in 1931.

Refined oils exported in November, 1930, totaled 7,185,836 bbls., increasing to 7,631,575 bbls. in the same month of 1931, showing a favorable turn in the quantity exported, especially as there was a decided falling off in the 11-month period. The 11 months of 1930 showed exports of 113,327,503 bbls. valued at $411,537,672, declining to 85,520,370 bbls. valued at $218,925,082 in 1931.

Gasoline imports in November, 1930, totaled 1,078,870 bbls. valued at $3,415,065, declining to 586,196 bbls. valued at

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Battle of Octanes Now Well Under Way In California Area

LOS ANGELES, Calif., Jan. 4.—The battle of the octanes is well under way on the Pacific Coast and developments indicate that before long all major marketers will be obliged to raise the octane rating of their motor fuel. The Standard started the ball rolling by introducing the octane factor before Christmas and the company reports a satisfactory response to its advertising campaign featuring high octane efficiency.

The Union Oil Co. started off the new year by introducing Union 76 gasoline which it is asserted has the highest octane rating of any nonpremium gasoline marketed on the Pacific Coast. When increasing the octane rating the Union changed over from a water white gasoline to one with a rich orange color. The Standard's new gasoline remained white, no distinguishing color being added when the octane rating was stepped up.

In addition to the red Ethyl Gasoline sold on the Pacific Coast by Union, Standard, Associated, Richfield, General Petroleum, Rio Grande and The Texas Company, several nonpremium gasolines are colored. These include the Union's orange, General Petroleum's violet ray, Rio Grande's blue, Signal Oil & Gas Co.'s purple and the Gilmore Oil Co.'s blue green.

On the West Coast the Shell markets a 400 gasoline and in place of Ethyl a premium grade containing a benzol blend designated as super Shell.

FOREIGN OUTPUT GROWS FASTER THAN DEMAND

An increasing number of petroleum refineries in foreign countries accompanied by substantial improvements in refinery technology is reported in a bulletin just issued by the Commerce Department. This bulletin which was prepared in the petroleum section of the minerals division presents brief outlines of the present status of petroleum refining in 38 foreign countries as reported by representatives of the Departments of Commerce and State in those areas.

The development of the petroleum industry abroad, F. M. Feiker, director, Bureau of Foreign and Domestic Commerce, declares in a foreword to the bulletin, is of intimate concern to the American industry because of the position of petroleum products in our export trade. In 1930, a period of low petroleum prices, exports from the United States of all classes of petroleum products amounted to $494,339,000, of which refined products alone accounted for $438,195,000. This figure for petroleum exports was exceeded only by that for machinery and raw cotton.

That the market for American refined petroleum products is affected in no small measure by the refining capacity of foreign countries is indicated by the situation in connection with gasoline. The United States exported 6,543,000 bbls. of this product in 1921 and 63,195,000 bbls. in 1930, with each intervening year showing a progressive increase. However, the ratio of United States gasoline exports to world exports has not proved so favorable. In 1921, of the gasoline exported by the 10 leading exporting countries, the United States accounted for 45 per cent. In 1924, the ratio had risen to a peak of 72 per cent but from that time on it began to decline, falling to 49 per cent in 1930. It is obvious, the bulletin declares, that foreign refining capacity is increasing more rapidly than foreign demand for refined petroleum products.

Manufacture of Natural Gasoline

California Adds to Stocks in November Due to Less Demand

Natural gasoline production in California was maintained during November at approximately the same rate as during October, but the lesser use of the material on the part of refiners caused an increase in stocks of 17,710 bbls. for November, according to the Bureau of Mines. In November the total output of natural gasoline was 40,633 bbls. per day compared with 40,256 bbls. per day in October. Refinery requirements decreased to 28,182 bbls. per day during November compared to 34,444 bbls. per day during October.

For November a total of 1,218 988 bbls. of natural gasoline were made as gross, and during the month 11,102 bbls. were returned for processing and is shown as a stock transfer, leaving a net production of 1,207,886 bbls. Of this, 81,133 bbls. of natural gasoline were run to refineries with the crude and charged to stills. In addition, 764,341 bbls. were blended at refineries with the refinery gasoline making a total utilization of natural gasoline by refiners of 845,474 bbls. for the month. An item shown as unaccounted for losses, amounting to 53,-119 bbls., reduced the excess of the supply over the demand to 309,293 bbls.

In itemizing the outlet for this excess after supplying the refinery demands, 10,-142 bbls. are shown as consumed as Pacific Coast exports, and 281,441 bbls. as intercoastal shipments or a total market demand outside of refineries of 291.583 bbls. This leaves 17,710 bbls. as excess production and this volume was added to stocks.

Natural gasoline stocks inside the Pacific Coast territory at refineries totaled 1,500,256 bbls. December 1, stocks held in the territory but not at refineries totaled 317,832 bbls., making the total nat-

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ARKANSAS FUEL OIL CO. BUILD EAST TEXAS PLANT

The Arkansas Fuel Oil Co. a subsidiary of the Cities Service Co. is building a 3,000-gallon natural gasoline plant on the Yount-Lee Oil Co.'s Smith lease in the Castleberry Survey, in East Texas. This will be the first plant to be built by the company in this field and will take gas over an area of 4,000 acres. The plant will be built of parts salvaged from three other nonoperating properties, namely the 10,000-gallon natural gasoline plant located near Louann, Ark., in Section 24-15s-17w, a similar sized plant near Stephens, Ark., and a small new plant near Cartersville, La.

NEW PLANT IN TRINIDAD

The Apex (Trinidad) Oilfields. Ltd., has placed a new carbon union process casinghead gas plant in operation in the fields of Trinidad. The plant was built by the British Carbon-Union, Ltd.

The plant consists of three adsorbers, each containing a bed of highly active carbon, two working in parallel while the third is being regenerated, involving the steaming out of the gasoline charged carbon and the drying and cooling of the unit in preparation for a fresh charge.

While the plant is rated at 1,850 gallons per 24 hours, the company has increased the recovery to 3,100 gallons per 24 hours, from 2 250.000 cubic feet of gas. Capacity of the plant will be stepped up shortly to more than 5.500 gallons daily in the installation of three additional adsorbers.

EXPLAIN ECONOMIC PHASES OF GASOLINE SPECIFICATIONS

Technical Committee
Natural Gasoline Association of America*

Although the complete economic effects of the new natural gasoline grading system can only be determined by actual use of the specifications in the channels of trade, the only uncertain factors in the equation are the ones bearing on demand in relation to grade. The supply factors have been rather thoroughly analyzed and can be simply stated.

The vapor pressure specification in the new grading system is the essential economic element. On this spec fication depend plant yields and the uses to which the product can be put. The sole effective function of the distillation specification is to provide a barrier against abnormal products or to provide a key to physical properties.

To properly understand the supply factors created by the new grading system, it should be stated clearly that each gasoline plant is definitely limited as to the number of grades it can produce under the new grading system. If a plant normally produces a 26-70 gasoline, it can not normally yield a 26-55 gasoline. If the demand is for 26-pound gasoline, this plant must sell in a market that requires 70 per cent or more at 140. The vapor pressure of its product can not be lowered or raised without raising or lowering the per cent at 140. A decrease of approximately 1 pound in vapor pressure is accompanied by a decrease of 1 per cent at 140.[1] In reducing the product of such a plant to the 22-pound limit it may still maintain its position in the bracket for 70 per cent at 140 or it may be moved slightly within the 55 per cent at 140 bracket. Similar conditions will apply at each vapor pressure limit, because whatever the distillation characteristics may be they are sharply defined and relatively inflexible for each vapor pressure limit.

These basic distillation characteristics depend on the properties of the pentanes and heavier in the natural gasoline. Fortunately (in the interest of simplicity) the pentanes and heavier of some 80 to 90 per cent of natural gasoline is very much the same, at least in regard to distillation characteristics. From these considerations, it follows that the supply of natural gasoline in relation to the distillation characteristics is quite rigidly fixed.

It has been indicated[2] that the loss in yield due to reductions in vapor pressure of natural gasoline is comparatively unaffected by the characteristics of the pentanes and heavier. The loss in passing from one vapor pressure limit of the new grading system to the next lower limit will be in the neighborhood of 11 to 15 per cent, regardless of the distillation characteristics. This condition places all manufacturers on the same plane in regard to the vapor pressure spec fications of the new grading system. There is no such flexibility or common basis in regard to the distillation characteristics. Consequently, the vapor pressure specification is the predominant economic factor as far as supply is concerned.

In the reference[2] cited a table was presented showing the price ratios to equalize gasoline plant income. This table was based on theoretical calculations entirely and is reproduced in part below. At one large plant a detailed and lengthy study of the actual plant yields in relation to vapor pressure of product has been made. It will be interesting to compare the results of this practical test with the earlier theoretical calculations. Such a comparison is presented in Table 1.

TABLE 1—PRICE RATIOS NECESSARY TO EQUALIZE GASOLINE PLANT INCOME UNDER NEW GRADING SYSTEM

Reid vapor pressure of product	Theoretical	Actual plant test 90 gravity raw gasoline
26	1.000	1.000
22	1.129	1.154
18	1.258	1.259
14	1.362	1.331
10	1.471	....

In view of the very good agreement of the operating test with theoretical predictions it can be assumed the ratios closely represent average conditions in efficiently operated natural gasoline plants. These ratios consequently afford a basis for determining relative cost of natural gasoline to the manufacturer.

In such a brief exposition as this, it is impossible to consider all the elements. For example, those desirable factors in antiknock ratings not adequately defined by octane numbers, such as lead responsiveness and maintenance of antiknock values over wide operating ranges, are all in favor of natural gasoline. The motoring public is gradually learning the desirable features of volatile motor fuels, for who has not received innumerable complaints about "third grade" motor fuels? These items can not be appraised mathematically. But it has been fairly established that the plant yield basis for the new natural gasoline grading system is economically sound for both buyer and seller, and, if anything, the plant yield ratio basis favors the purchaser.

Much has been said of the encroachment on the natural gasoline markets by cracking processes and lately vapor recovery systems. Dire predictions have been the fashion ever since it was ascertained that the conventional "casinghead" gasoline was not suitable as a motor fuel per se. Still the natural gasoline industry maintains its useful functions and the new grading system is a distinctly progressive step. As a last resort, a safety valve, the very lowest vapor pressure products can be marketed directly as premium motor fuels.

OFFICIAL SPECIFICATIONS FOR NATURAL GASOLINE

Effective January 1, 1932. Adopted by Natural Gasoline Association of America December 10, 1930.

Natural gasoline is a liquid petroleum product consisting of the heavy hydrocarbons extracted from natural gas by such means as compression, absorption, and other processes.

Natural gasoline is defined further for commercial purposes by the following specifications:

Vapor pressure—10 to 34 pounds per sq. in. absolute at 100° F. (Reid).

Percentage evaporated at 140° F.—25 to 85.

Percentage evaporated at 275° F.—not less than 90.

Endpoint—not higher than 375° F.

Corrosion—non-corrosive.

Doctor test—negative, "sweet."

Color—not less than plus 25 (Saybolt).

In addition to the above general specifications, natural gasoline shall be divided into 24 possible grades on a basis of vapor pressure and percentage evaporated at 140° F. Each grade shall have a range in vapor pressure of four pounds, and a range in the percentage evaporated at 140° F. of 15 per cent. The maximum vapor pressure of the various grades shall be 14, 18, 22, 26, 30 and 34 pounds respectively. The minimum percentage evaporated at 140° F. shall be 25, 40, 55 and 70, respectively. Each grade shall be designated by its maximum vapor pressure and its minimum percentage evaporated at 140° F., as shown in the accompanying table.

Percentage Evaporated at 140°F.

Vapor Pressure, Lbs. Per Sq. In. Abs. at 100° F. (Reid)	25 ← → 40	← → 55	← → 70	← → 85
34	Grade 34-25	Grade 34-40	Grade 34-55	Grade 34-70
30	Grade 30-25	Grade 30-40	Grade 30-55	Grade 30-70
26	Grade 26-25	Grade 26-40	Grade 26-55	Grade 26-70
22	Grade 22-25	Grade 22-40	Grade 22-55	Grade 22-70
18	Grade 18-25	Grade 18-40	Grade 18-55	Grade 18-70
14	Grade 14-25	Grade 14-40	Grade 14-55	Grade 14-70
10				

*Statement issued in connection with new specifications for natural gasoline which became effective January 1, 1932.

[1] G. G. Brown, proceedings of the tenth annual convention Natural Gasoline Association of America, May 20, 1931 (p. 43).

[2] R. C. Alden, "Some Comments on the New Grading System for Natural Gasoline," proceedings of the tenth annual convention, N.G.A.A. (p. 38).

SINCLAIR-PRAIRIE MERGER VERY NEAR

(Continued from Page 14)

Oil & Gas Co., and a half interest in the Wichita Oil & Gas Co., adding substantially to its crude production. In the following year, Prairie acquired the Everett Oil Co.

In June, 1914, the United States supreme court held that the pipe line properties of the Prairie Oil & Gas Co. were

Nelson K. Moody
President, Prairie Oil & Gas Co.

common carriers and subject to regulation by the Interstate Commerce Commission. Following this decision, the Prairie Pipe Line Co. was incorporated in January, 1915, under the laws of Kansas, to take over the crude oil transporting properties of Prairie Oil & Gas Co. The entire capital stock of the pipe line company was distributed as a 150 per cent dividend to stockholders of Prairie Oil & Gas Co.

In January, 1918, Prairie Oil & Gas Co. of Texas was incorporated with nominal capital of $20,000, following a decision of the Federal courts declaring the Texas corporation license tax unconstitutional. The Texas subsidiary took up leases on 78,000 acres in northwest Texas.

Producers & Refiners Corp. was ab-

Earl W. Sinclair
President, Sinclair Consolidated Oil Corp.

sorbed by Prairie Oil & Gas Co. in 1923.

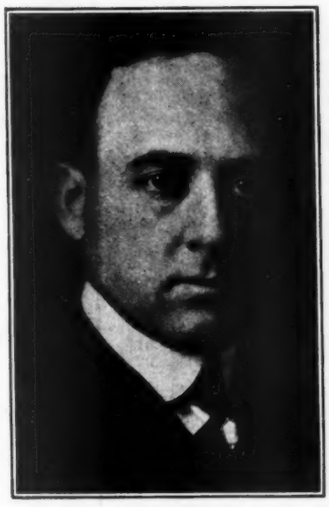
In July, 1924, the Panhandle Pipe Line Co., Amarillo Gas Co., Mountain States Oil & Gas Co., Producers & Refiners Corp., and Prairie Oil & Gas Co.'s interests in the Panhandle were consolidated by the formation in Colorado of the Southwestern Development Co., 51 per cent of the capital being controlled by Prairie Oil & Gas, the balance being controlled by Albert R. Jones and the Mission Oil Co.

Early in 1929 the Prairie Oil & Gas Co. bought all of the production and producing leases of Thomas B. Slick together with a half interest in all the properties on which Slick was drilling and a half interest in all the Slick undeveloped acreage. It was reported at the time that the consideration was about $36,000,000.

Rich in Oil and Gas Leaseholds

At last reports, Prairie Oil & Gas controlled oil and gas leases on about 1,500,000 acres in Oklahoma, Kansas, Louisiana and Texas, with additional leaseholds in the same states and in Wyoming, owned by subsidiaries, of more than 500,000 acres.

The Prairie Oil & Gas Co. has a potential production estimated at more than 100,000 bbls. a day, and actually produces about 45,000 bbls., of which 27,000 bbls. comes from Oklahoma wells; 3,000



C. H. Kountz
Vice President, Prairie Pipe Line Co.

bbls. from Kansas; 9,500 bbls. from Texas, and 5,500 bbls. in New Mexico and Wyoming. Its richest producing properties in Oklahoma are located in the prorated fields of the State. It is a big potential producer in the Oklahoma City and Greater Seminole Fields, and has production from more than 30 wells in East Texas. The company has about 55,000,000 bbls. of crude oil in steel storage.

Took Over Many Companies

During recent years, Prairie Oil & Gas Co. has taken over a number of smaller companies, these acquisitions including the pipe line of the Ryan Petroleum Co. in the Burk-Waggoner Field in Texas, taken over in 1919; the Olean Petroleum properties in the Ingalls Pool in Payne County, Oklahoma; Texas and Mexico holdings of the Shamrock Oil Co.; Greenwood County, Kansas, properties of the Franklin Oil Co.; producing properties of the Lima Oil & Gas Co. in the same area; Conway Brothers and J. S. Cosden properties in Brown County, Texas; and others.

World's Largest Pipe Line

The Prairie Pipe Line Co. is the largest pipe line system in the world. It has a gathering capacity of nearly 500,000 bbls. per day and a shipping capacity of 225,000 bbls. per day. The system is made up of 5,794 miles of trunk lines and 7,403 miles of gathering lines connected to over 90,000 wells on over 7,000 producing properties in the Mid-Continent fields of Kansas, Oklahoma and Texas. The company's 8-inch Panhandle line is 225 miles in length connecting with the main line in southern Oklahoma. The Prairie's trunk lines start in North Texas and in the Mexia district in East Central Texas and run north through Oklahoma and Kansas fields. Their northern termini are Griffith, Lake County, Indiana, in the Chicago refinery district, and Wood River, Ill., where the line connects with the Illinois Pipe Line Co.'s lines running eastward. Short lines run from the main line to the refineries en route. The Pure Oil Pipe Line Co. of Texas is a Prairie subsidiary. It consists of 478 miles of gathering lines and 416 miles of 8-inch trunk line running from Mexia, Tex., to Smith's Bluff, Tex., near the Gulf Coast. The Prairie pipe lines are located so that they can supply crude oil to the Sinclair refineries in Houston, Tex., Sand Springs and Muskogee, Okla.; Coffeyville and Kansas City, Kans.; and Chicago, Ill., but the combined capacity of these refineries presents only a small percentage of the delivering capacity of the Prairie system.

The Prairie Oil & Gas Co. does not maintain casinghead gasoline plants, but the company sells a large volume of natural gas to manufacturers of gasoline.

Refining Plants

The acquisition of a controlling interest in the Producers & Refiners Corp. gave the Prairie Oil & Gas Co. three refineries, one at West Tulsa, Okla., with a daily crude oil capacity of 6,000 bbls. and a cracking capacity of 3,000 bbls. per day; another at Parco, Wyo., with a crude oil capacity of 8,000 bbls. per day and a cracking capacity of 3,000 bbls. per day, and a third at Blackwell, Okla., with a crude oil capacity of 5,000 bbls. per day, but which is idle.

The Prairie's natural gas reserves are enormous. They lie in the Texas Pan-

Dana H. Kelsey
Vice President and General Manager, Prairie Oil & Gas Co.

handle, being a part of the Producers & Refiners properties that were taken over. The company markets gas through subsidiary and associated companies in Texas and Colorado in very large volume.

NEW A.P.I. COMMITTEES PRODUCTION DIVISION

Announcement has been made of appointment of chairmen and members of committees to serve the American Petroleum Institute's division of production in 1932.

V. L. Martin of the Prairie Oil & Gas Co., Independence, Kans., has been appointed by Charles F. Roeser of Roeser & Pendleton, Inc., Fort Worth, Tex., chairman of the division of production general committee, as chairman of the divisional committee on disposal of production wastes. George F. Prussing, Union Oil Co. of California, Los Angeles, Calif., is chairman of the committee on fire prevention. D. S. Bushnell, Northern Group of Pipe Lines, New York, is chairman of the committee on pipe line crossings under railroad tracks. C. R. Weidner, Prairie Pipe Line Co., Independence, Kans., is chairman of the committee on corrosion of oil field equipment. D. V. Stroop of the American Petroleum Institute staff, New York, is secretary of the four committees.

Following is the personnel of the committees:

Disposal of Production Wastes

M. E. Brock, Gulf Production Co., Houston, Tex.; D. B. Dow, Indian Territory Illuminating Oil Co., Bartlesville, Okla.; H. B. Haney, Associated Oil Co., San Francisco, Calif.; Fritz Karge, Union Oil Co. of California, Los Angeles, Calif.; S. W. Oberg, Humble Oil & Refining Co., Houston, Tex.; R. D. Risser, Shell Petroleum Corp., Tulsa; John A. Ritter, Sun Oil Co., Dallas, Tex., and William F. Taylor, Carter Oil Co., Tulsa.

Committee on Fire Prevention

James Anderson, Humble Oil & Refining Co., Houston, Tex.; P. R. Applegate, Northern Group of Pipe Lines, New York; H. C. Fitzpatrick, Prairie Oil & Gas Co., Independence, Kans.; R. J. Fleckenstein, Texas Pacific Coal & Oil Co., Fort Worth, Tex.; R. W. Howe, Atlantic Pipe Line Co., Dallas, Tex.; George H. Jaques, Midwest Refining Co., Denver, Colo.; Ralph H. Kinsloe, Magnolia Petroleum Co., Dallas, Tex.; B. A. Moeller, General Petroleum Corp. of California, Vernon, Calif.; C. J. Nobmann, Shell Oil Co., San Francisco, Calif.; R. W. Pack, Sun Pipe Line Co., Beaumont, Tex.; C. C. Scharpenberg, Standard Oil Co. of California, San Francisco, Calif.; C. L. Swim, Skelly Oil Co., Tulsa, and H. J. Wilson, Associated Oil Co., San Francisco, Calif.

Corrosion of Oil Field Equipment

J. C. Askam, Ohio Oil Co., Findlay, Ohio; Charles Fitzgerald, Pure Oil Pipe Line Co. of Texas, Dallas, Tex.; Stanley Gill, Gulf Production Co., Houston Tex.; W. G. Heltzel, Stanolind Pipe Line Co., Tulsa; R. W. Howe, Atlantic Pipe Line Co., Dallas, Tex.; K. V. King, Standard Oil Co. of California, San Francisco, Calif.; O. Q. Lomax, Humble Pipe Line Co., Houston, Tex.; C. J. Nobmann, Shell Oil Co., San Francisco, Calif.; R. W. Pack, Sun Pipe Line Co., Beaumont, Tex.; J. H. Peper, Northern Group of Pipe Lines, New York; H. B. Truett, Associated Oil Co., San Francisco, Calif.; J. C. Walker, the Empire Companies, Tallant, Okla., and F. E. Warterfield, Jr., Oklahoma Pipe Line Co., Muskogee, Okla.

Pipe Line Crossings Under Rails

E. L. Adams, General Petroleum Corp. of California, Los Angeles, Calif.; R. P. Bascom, Shell Pipe Line Co., St. Louis, Mo.; F. E. Coyle, Associated Oil Co., Wilmington, Calif.; Charles Fitzgerald, Pure Oil Pipe Line Co. of Texas, Dallas, Tex.; A. H. B. Gore, Richfield Oil Co., Los Angeles, Calif.; William Groundwater, Union Oil Co. of California, Los Angeles, Calif.; R. V. Hanrahan, Humble Pipe Line Co., Houston, Tex.; Fred K. Haskell, Empire Pipe Lines, Bartlesville, Okla.; J. L. Burke, Stanolind Pipe Line Co., Tulsa, Okla.; R. W. Howe, Atlantic Pipe Line Co., Dallas, Tex., and B. E. Hull, Texas Pipe Line Co., Houston, Tex.

E. C. Kincade, Gulf Pipe Line Co., Houston, Tex.; E. H. Leroux, Oklahoma Pipe Line Co., Muskogee, Okla.; F. Ray McGrew, Standard Pipe Line Co., Shreveport, La.; Harry Moreland, Great Lakes Pipe Line Co., Kansas City, Kans.; Stuart Moser, Standard Oil Co. of California, San Francisco, Calif.; R. W. Pack, Sun Pipe Line Co., Beaumont, Tex.; A. H. Riney, Phillips Petroleum Co., Bartlesville, Okla.; F. B. Sims, Shell Oil Co., Los Angeles, Calif.; E. H. Skinner, Continental Pipe Line Co., Ponca City, Okla.; G. M. Vandaveer, Midwest Refining Co., Casper, Wyo., and C. R. Weidner, Prairie Pipe Line Co., Independence, Kans.

The organization of department committees for the American Gas Association year has been nearly completed by Chairman Strickler. A new subcommittee on pipe line crossings has been formed with F. C. Brown of the Continental Construction Co., as chairman. This committee is to consider the proposals as to forms of agreements for pipe line crossings under railroad tracks.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINES

OKLAHOMA (Group 3)—	January 5	
*U. S. Motor	.02⅝	.03
60-62 400	.02⅞	.03¼
64-66 390	.03¼	.03¾
†Domestic Aviation	.03⅝	.03⅞
68-70 350	.03⅞	.04⅛
NORTH TEXAS—		
*U. S. Motor	.02⅝	.03
60-62 400	.02¾	.03¼
64-66 390	.03¼	.03¾
Domestic Aviation	.03⅝	.03⅞
64-66 360	.03⅞	.04⅛
‡NORTH LOUISIANA—		
U. S. Motor	.03¼	
60-62 400	.03½	
‡ARKANSAS—		
U. S. Motor	.03¼	
CHICAGO—		
U. S. Motor	.02⅝	.02¾
60-62 400	.02¾	.03
Domestic Aviation	.03½	.03⅝
68-70 350	.03⅞	.04⅛

Octane Ratings—Above quotations cover price ranges on gasolines in which no octane rating is given. In the case of the U. S. Motor and 60-62 400 endpoint grades where an octane rating of 57-65, inclusive, is guaranteed, prices are one-fourth cent per gallon higher than quotations shown in above tables; where an octane rating of 65 or higher is guaranteed, the prices are one-half cent higher. In the case of the remaining grades, gasolines of 65 octane rating or higher are quoted one-fourth cent higher than the quotations shown in above tables. Unless otherwise provided by agreement of buyers and sellers, the Series 30 testing unit of the Ethyl Gasoline Corp. is recognized as standard in determining octane ratings.

*Present distillation specifications on U. S. Motor gasoline are: 10 per cent recovery, 167° F. maximum; 50 per cent, 284° F. maximum; 90 per cent, 392° F. maximum; residue not exceeding 2 per cent; maximum vapor pressure, 12 pounds.

†Present distillation specifications on Domestic Aviation gasoline are: 10 per cent recovery, 158° F. maximum; 50 per cent, 230° F. maximum; 90 per cent, 320° F. maximum; residue not exceeding 2 per cent; maximum vapor pressure at 100° F. not exceeding 10 pounds. Additional specification on Domestic Aviation and U. S. Motor gasoline available from bulletins of Bureau of Mines, Washington, D. C.

‡For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—		
U. S. Motor	.04½	
60-62 400	.04½	.04¾
64-66 375	.05	.05¼
68-70 350	.05¼	

Note—In the case of U. S. Motor and 60-62 400 endpoint grades, same price differentials based on octane ratings as shown in above tables for Oklahoma and other Mid-Continent areas.

CALIFORNIA (domestic movement only)—		
54-58 U. S. Motor	.06	.06½
58-60 400	.06½	.07
NEW YORK (Bayonne, N. J.)—		
U. S. Motor, below 65 octane number	.05¾	
U. S. Motor, minimum 65 octane	.06	.06½

NATURAL GASOLINES

OKLAHOMA—	January 5	
Grade 26-70	.02	.02¼
NORTH TEXAS—		
Grade 26-70	.01¾	.01⅞
NORTH LOUISIANA—		
Grade 26-70	.02⅛	
CALIFORNIA—		
75-78 375	.05¼	.06¼

Note—Grade 26-70 is one of the 24 grades adopted by the Natural Gasoline Association of America which became finally effective January 1, 1932. For this grade the vapor pressure is 22-26 pounds (Reid method) and 70 to 85 per cent evaporated at 140° F. Additional grades will be quoted weekly later if desired by buyers and sellers. See page 74 of this issue for explanation of new grading system.

KEROSENE

(All kerosenes water white.)

OKLAHOMA (Group 3)—	January 5	
41-43	.02⅝	.02½
42-44	.02½	.02⅝
NORTH TEXAS—		
40-41	.02¼	.02⅜
41-43	.02⅜	.02½
NORTH LOUISIANA—		
41-43	.03	
42-44	.03¼	
ARKANSAS—		
41-43	.03	
PENNSYLVANIA—		
45	.04⅜	
46	.04½	
47	.04⅝	
CHICAGO (Based on Group 3)—		
41-43	.02⅜	.02½
42-44	.02½	.02¾
CALIFORNIA—		
38-40 high burning test	.04½	.05½
NEW YORK (Bayonne, N. J.)—		
41-43	.06	

TRACTOR FUELS*

OKLAHOMA (Group 3)—	January 5	
39-41 prime white	.02	.02⅛
38-40 light straw	.01⅞	.02
NORTH TEXAS—		
38-40 light straw	.01¾	.01⅞
CHICAGO—		
38-40 light straw	.01¾	.02
PENNSLYVANIA—		
41-43 prime white	.04	

*There are no standard specifications for tractor fuels. Grades commonly sold have flash under 175° F. (open cup) and under 575° F. endpoint and less than .2 per cent sulphur. Tractor fuels are available from all Mid-Continent refining groups at prices in line with the Oklahoma market taking into consideration differentials in freight rates.

FURNACE OILS*

OKLAHOMA (Group 3)—	January 5	
32-36 straw	.01⅝	.01¾
36-38 straw	.01¾	.01⅞
38-40 straw	.01⅞	.02⅛
39-41 prime white	.02	.02⅛
NORTH TEXAS—		
38-40 straw	.01¾	.01⅞
NORTH LOUISIANA—		
36-40	.02¼	.02⅜
ARKANSAS—		
32-36	.02⅛	.02¼
CHICAGO—		
32-36 straw	.01¾	.01⅞
38-40 straw	.01⅞	.02⅛
PENNSYLVANIA—		
40-41 prime white	.03¼	.03½
NEW YORK (Bayonne)—		
32-36	.03½	
36-40	.03¾	

*Above prices based on furnace oils of zero cold test, under 190° F. flash and good odor.

GAS OIL, DIESEL OIL AND FUEL OIL

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

OKLAHOMA—	January 5	
32-36 (G.O.) cracking stock	.01⅛	.01¼
U.G.I. (G.O.)	.01¼	.01⅜
28-30, zero to 10	.45	.50
26-30, zero to 10	.40	.45
24-26	.35	.40
20-22	.27½	.35
16-20	.25	.30
Below 16	.22½	.27½
NORTH TEXAS—		
32-36 (G.O.) industrial	.01⅛	.01¼
22-26	.40	.45
Below 20	.35	.40
NORTH LOUISIANA—		
30-32 (G.O.) zero	.02	.02¼
18-22	.35	.50
ARKANSAS—		
28-32 (G.O.) zero	.55	.60
16-20	.40	.50
CHICAGO—		
32-36 (G.O.) industrial	.01¼	.01½
28-30 (zero)	.50	.60
22-26	.30	.37½
18-22	.22	.27½
Below 18	.20	.25

Note—Fuel oils of more than 40 cold test generally 5 to 10 cents per barrel less in all areas than shown in above tables.

CALIFORNIA—		
30-34 (G.O.) per bbl.	.85	1.05
27 plus Diesel	.80	1.00
15-19 bunker (at tidewater)	.60	.70
15-19 bunker (cargo lots)	.55	.65
15-19 (tank car)	.45	.55
GULF COAST—		
28-30 (G.O.)	.02¼	.02½
Bunker C (cargo lots)	.40	.50
NEW YORK (Bayonne, N. J.)—		
28 plus (G.O.)	.03½	.04
28-30 Diesel	1.30	
Bunker C	.60	

NEUTRAL OILS

(Viscosity at 100° F., and Color)

OKLAHOMA (Group 3)—	January 5	
Zero to 10 Cold Test:		
150-3	.06½	.06¾
180-3	.08	.08¼
180-4	.07½	.07¾
200-3	.08½	.09½
200-4	.08½	.09
240-3	.10½	.11
240-4	.10	.10½
280-3	.12¼	.12½
280-4	.11¼	.11½
300-3.5	.12¾	.13
350-3.5	.13¼	.13½
400-4	.13¾	.14
500-4.5	.14¼	.14½
100-2 paraffin oil	.04½	.04¾
15-30 Cold Test:		
200-3	.08¾	.09
200-4	.08¼	.08½
240-3	.10½	.10¾
240-4	.09½	.09¾
280-3	.11¾	.12
280-4	.10¾	.11
PENNSYLVANIA—		
Viscosity at 70° F., and Color:		
150-3	.14	.15
180-3	.18	.18½
200-3	.19	.19½
220-3	.21	.22
36 Miners Neutral	.05½	
34 Neutral	.05½	
34 Sundebloom Neutral	.05	
GULF COAST—		
Pale Oils:		
100-2-2½	.05	.05½
200-3	.07	.07½
300-3	.07¾	.08
500-3½	.09	.09½
750-3½	.10	.10½
1,200-3½	.12	.12½
2,000-4	.14	.14½
Red Oils:		
200-5-6	.06	.06¼
300-5-6	.06¾	.07
500-5-6	.08	.08½
1,200-5-6	.11	.11½
2,000-6 plus	.13	.13½
CALIFORNIA—		
130-2½-3	.08¼	.08¾
200-2½-3	.09¼	.10¼
300-3-3½	.10¼	.11¼
350-3½-4	.11¼	.12
450-3½-4	.12	.12¾
550-3½-4	.12¾	.13¾
200-4½-5	.09¾	.10¼
300-5-6	.10½	.11
400-5-6	.11½	.12½
500-5-6	.12¾	.13½
600-5-6½	.13½	.14½
700-6½ plus	.14½	.14¾
NEW YORK (Bayonne, N. J.)—		
Paraffin Oil:		
25 pale	.10¼	
28 pale	.07¼	
280 red	.12½	
250 red	.11½	
225 red	.10	
200 red	.09¼	

BRIGHT STOCKS AND STEAM REFINED STOCKS

OKLAHOMA (Group 3)—	January 5	
600 light green S.R.	.04	.06
600 dark green S.R.	.03½	.05
Bright Stock:		
190-200 D	.19	.20
150-160 D, 0-10	.17½	.18
150-160 D, 10-25	.17	.17½
150-160 D, 25-40	.16½	.17
150-160 E	.16½	
PENNSYLVANIA—		
600 S.R.	.11	.11½
650 S.R.	.14	.15
600 Pennsylvania flash	.16	.16½
600 E filtered	.14	.15
600 D filtered	.19	.20
Pennsylvania Grade Bright Stock:		
10-15 pour test	.19	.20
25-30 pour test	.19	
35 and above	.18½	.19

WAX AND PETROLATUM

(Prices per pound.)

OKLAHOMA (Group 3)—	January 5	
124-126 white crude scale	.01⅝	.01¾
PENNSYLVANIA—		
At New York:		
122-124	.02⅛	
124-126	.02⅛	
NEW YORK (Bayonne, N. J.)—		
Refined Wax:		
120-122	.02¾	
125-127	.02⅞	
130-132	.03⅝	.04
133-135	.03⅞	.04
135-137	.04¼	
Petrolatum in barrels in carload lots:		
Dark green	.01¾	
Amber	.02½	
Extra amber	.03	
Cream	.05½	
Lily white	.06½	
Snow white	.07	

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

EXPORT PRICES

GASOLINE

GULF COAST—	January 5	
U. S. Motor	.04¾	
60-62 400 endpoint	.04⅞	
61-63 390 endpoint	.04⅞	
64-66 375 endpoint	.04⅞	.05
LOS ANGELES, CALIF.—		
U. S. Motor, 53-55 437 e.p.	.04¼	.04½
U. S. Motor, 65 octane number	.05	
U. S. Motor, 67 octane number	.05¼	
U. S. Motor, 69 octane number	.05½	
58-62 400 endpoint gasoline	.04¾	.05

KEROSENE

GULF COAST—		
41-43 prime white	.04	.04¼
41 water white	.04¼	
LOS ANGELES, CALIF.—		
41-43 water white	.04	.04¾

LUBRICANTS

NEW YORK (Bayonne, N. J.)—		
600, steam refined cylinder stocks, in bbls.	.19	.20
635, steam refined	.21	.22
650, steam refined	.22	.23
600, Pennsylvania Flash	.24	.25
630, Pennsylvania Flash	.27	.28
600, Warren E	.22½	.23
600, Oil City E	.21½	.22
Light 140-150 Bright Stocks	.29	.30
Dark 140-150 Bright Stocks	.28	.29

NAPHTHAS

OKLAHOMA (Group 3)—	January 5	
50-52 450 (blending)	.02⅝	.02¾
PENNSYLVANIA—		
50-54 430-450 (blending)	.04¼	.04½
ARKANSAS—		
48-50 450 (blending)	.02¾	
CHICAGO (Basis Oklahoma Group 3)—		
50-52 450 (blending)	.02½	.02¾
Cleaners' naphtha, 56-58 gr., 200 i.b.p.-320 e.p.	.05½	.05¾
Lacquer diluent, 180 i.b.p.-250 e.p.	.08½	.08¾
Lacquer diluent, 140 i.b.p.-200 e.p.	.08¾	.09
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.05½	.06
Stoddard solvent, 300 i.b.p.-410 e.p., over 100° flash	.04¾	.05
Petroleum thinner, 290, 300 i.b.p.-415 e.p., over 83° flash	.04¼	.04½
V.M.&P. naphtha, 56-58 gr., 190, 200 i.b.p.-330 e.p.	.05¼	.05½
Petroleum spirits	.04	.04½

CALIFORNIA CRUDE OIL PRICES

STANDARD OIL CO. OF CALIFORNIA

For its current purchases of crude oil at the well (unless otherwise specified) the allowable crude oil produced in accordance with allocations made by the California State-wide Curtailment Committee. All gravities above those quoted take highest price offered in that field. Effective June 19, 1931, at 7 a. m.

Gravity	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Olinda-Brea, Canon	Torrance	Richfield	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	$.65	$.65	...	$.55	$.51
15-15.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.51
16-16.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.51
17-17.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.51
18-18.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.51
19-19.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.51
20-20.9	.65	.65	.65	.66	.66	.65	.66	.65	...	.55	.51
21-21.9	.65	.65	.65	.68	.67	.65	.66	.65	...	.55	.51
22-22.9	.65	.65	.66	.70	.68	.66	.68	.65	...	.56	.52
23-23.9	.67	.67	.68	.72	.70	.67	.70	.66	...	.58	.54
24-24.9	.69	.69	.70	.74	.72	.68	.72	.67	$.65	.61	.57
25-25.9	.71	.71	.72	.76	.74	.70	.74	.69	.65	.64	.64
26-26.9	.73	.73	.74	....	.76	....	....	.71	.65	.66	.66
27-27.9	.75	.75	.76	....	.78	....	....	.73	.68	.68	.67
28-28.9	.77	....	....	....	.80	....	....	.75	.71	.71	.69
29-29.9	.79	....	....	....	....	....	....	.77	.73	.74	.71
30-30.9	.81	....	....	....	....	....	....	.79	.75	.76	.73
31-31.9	....	....	....	....	....	....	....	....	.78	....	....
32-32.9	....	....	....	....	....	....	....	....	.80	....	....
33-33.9	....	....	....	....	....	....	....	....	.83	....	....
34-34.9	....	....	....	....	....	....	....	....	.85	....	....
35-35.9	....	....	....	....	....	....	....	....	.87	....	....

Standard Oil Co. of California prices in other fields:

Wheeler Ridge—55 cents per barrel for all grades (14° to 35.9°).

Coalinga—55 cents for all grades from 14° to 24-24.9°; 57 cents for 25 gravity.

Newhall, McKittrick and Kern River—55 cents for all grades (14° to 19.9°).

Montebello—65 cents for all grades (14° to 25.9°).

Whittier and LaHabra—65 cents for all grades (14° to 22.9°).

Elwood Terrace, f.o.b. ship—33° to 33.9°, 79 cents; 34° to 34.9°, 81 cents; 35° to 35.9° 84 cents; 36° and above, 87 cents.

Playa Del Rey—Prices subject to field gathering charge of 5 cents per barrel—19° to 19.9°, 65 cents; 20° to 20.9°, 65 cents; 21° to 21.9°, 66 cents; 22° to 22.9°, 67 cents, 23° to 23.9°, 68 cents; 24° to 24.9°, 67 cents; 25° and above, 68 cents.

(Continued on Page 87)

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

East Texas (Nov. 2, 1931)†.....$ .83
Corsicana heavy (Nov. 2, 1931)*..... .49
Other fields.....See gravity table

†Posted by Panola Pipe Line Co., Magnolia Petroleum Co., Tidal Refining Co., Sinclair Refining Co., Gulf Pipe Line Co., Atlas Pipe Line Co. *Magnolia Petroleum Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective December 16, 1931)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field) (Oct. 15, 1931).....$1.85
Pennsylvania Grade Oil in Southwest Pennsylvania Lines..... 1.55
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)..... 1.45
Penna Grade Oil in Buckeye Pipe Line Lines..... 1.25
Corning Grade Oil in Buckeye Pipe Line Co.'s line (Nov. 9, 1931)..... .85
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 10, 1931).... .60
Wayne district Oil in Cumberland Pipe Lines (April 23, 1931)..... 1.17

Tide Water Pipe Co.
(Effective December 16, 1931)

Bradford, Pa.....$1.85
Allegany, N. Y..... 1.85

Pure Oil Co.
(Effective December 16, 1931)

Cabin Creek, W. Va.....$1.45
Bradford Hollow, W. Va..... 1.45
Kelly's Creek, W. Va..... 1.45

Pennsoil Co.
(Effective December 16, 1931)

Pennsylvania Grade Oil in National Transit Lines:
Group A.....$1.80
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B.....$1.79
Includes Titusville district.
Group C.....$1.78
Includes Turkey and Tidiout districts.
Group D.....$1.77
Includes Bear Creek and Porkey districts.
Group E.....$1.75
Includes Eldenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinsua districts.
Price depends on length of pipe line haul to plant at Oil City.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties....See gravity table

WEST TEXAS

Iatan and Westbrook..Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Ector, Winkler and Pecos Counties*.....$ .50
Lea County, N. Mex.‡..... .50
Toboro, Pecos County, Aug. 25, 1931†. .35
*The Texas Company, November 3, 1931; Magnolia Petroleum Co., Humble Oil & Refining Co., Gulf Pipe Line Co., same day. †Shell Petroleum Corp. ‡Humble Oil & Refining Co., The Texas Company, November 2, 1931.

GULF COAST

Grade A and Grade B classifications discontinued by leading buyers.....
.....See gravity table
Jennings, La. (Nov. 2, 1931)*.....$ .65
Lockport, La. (Aug. 27, 1931)†.....
.....See Gulf Coast gravity table
Refugio light.....See gravity table
Refugio heavy (Nov. 2, 1931)‡..... .75
Markham (Nov. 3, 1931)‖..... .67
High Island (Nov. 3, 1931)¶..... .65
*Gulf Refining Co. †Vacuum Oil Co. ‡Humble Oil & Refining Co. §The Texas Company. ‖Gulf Pipe Line Co.

NORTH LOUISIANA AND ARKANSAS

Smackover, Ark. (all grades) (Nov. 4, 1931).....$ .55
Urbana, Ark. .....See note below
Bellevue, La. (June 3, 1931)..... .25
Urania, La. (Nov. 2, 1931)..... .50
Calion, Ark. (Aug. 22, 1931)..... .52
East El Dorado, Ark. (Nov. 4, 1931).. .55
Stephens, Ark., below 29° (Aug. 24, 1931)..... .41
Stephens, Ark., 29° and above (Aug. 24, 1931)..... .44
Other fields.....See gravity table

Note—Smackover, all grades, Standard Oil Co. of Louisiana, The Texas Company Gulf Refining Co., Magnolia Petroleum Co Bellevue posted by Magnolia Petroleum Co.; Urania by H. L. Hunt, Inc., and Louisiana Oil Refining Co.; Calion by Gulf Refining Co.; East El Dorado by Gulf Refining Co. and Magnolia Petroleum Co.; Stephens, Ark., by Louisiana Oil Refining Co. and Atlantic Oil Producing Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Ilea, light (Aug. 24, 1931).....$ .78
Ilea, heavy (Aug. 24, 1931)..... .59
Fort Collins (Nov. 3, 1931)..... .71
Florence (Nov. 2, 1931)..... .65
Wellington (Nov. 3, 1931)..... .61
Dutton Creek (Nov. 3, 1931)..... .78
Rock Creek, Wyo. (Nov. 3, 1931)..... .85
Frannie, light (Nov. 3, 1931)..... .61
Frannie, heavy (Nov. 3, 1931)..... .51
Salt Creek.....Mid-Continent gravity table
Big Muddy (Nov. 3, 1931)..... .81
Grass Creek (Nov. 3, 1931)..... 1.05

(Continued on Page 78)

CRUDE OIL GRAVITY TABLE

Gravity	1 Kansas and Oklahoma	2 North and Central Texas	3 East Central Texas	4 Gray County, Texas	5 Carson and Hutchinson Counties Texas	6 Salt Creek, Wyo.	7 North Louisiana and Arkansas	Gulf Coast (Tex. and La.)
Below 25 degrees	...	...	...	...	...	...	...	$.70
25-25.9 degrees	...	...	...	...	...	...	...	.71
26-26.9 degrees	...	...	...	...	...	...	...	.72
27-27.9 degrees	...	...	...	...	...	...	...	.73
28-28.9 degrees	...	...	...	...	...	...	...	.74
Below 29 degrees	$.61	$.61	$.61	...	...	$.61	$.61	...
29-29.9 degrees	.63	.63	.63	...	...	.63	.63	.75
30-30.9 degrees	.65	.65	.65	...	...	.65	.65	.76
31-31.9 degrees	.67	.67	.67	...	...	.67	.67	.77
32-32.9 degrees	.69	.69	.69	...	...	.69	.69	.78
33-33.9 degrees	.71	.71	.71	...	...	.71	.71	.79
34-34.9 degrees	.73	.73	.73	$.61	$.56	.73	.73	.80
35-35.9 degrees	.75	.75	.75	.62	.58	.75	.75	.81
36-36.9 degrees	.77	.77	.77	.65	.60	.77	.77	.83
37-37.9 degrees	.79	.79	.79	.67	.62	.79	.79	.85
38-38.9 degrees	.81	.81	.81	.69	.64	.79	.79	.84
39-39.9 degrees	.83	.83	.71	.66	.79	.79	.79	.85
40 degrees and over	.85	.85	.85	.73	.68	.79	.79	.86

The Magnolia Petroleum Co., which pays a flat price in every field in which it purchases oil, posted the following price notice: "Effective November 2, 1931, at 7 a. m. and until further notice our prices on crude oil will be as follows at the wells: North and North Central Texas, which includes only Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden, 83 cents; Central Texas, which includes only Mexia, Wortham, Corsicana light, Panola County and Lytton Springs, 79 cents; East Texas district, 83 cents; West Texas, which includes Winkler, Crane, Upton, Howard, Glasscock and Mitchell Counties, 50 cents; Panhandle district of Texas: Gray County, 73 cents; Carson and Hutchinson Counties, 66 cents; Southwest Texas: Mirando, 75 cents; Darst Creek, 60 cents; Corsicana heavy and Luling, 49 cents. Oklahoma: Cushing, Yale, Oklahoma City, Morrison, Wewoka, Seminole, 83 cents; Cement, Duncan and Walters, 75 cents; Hewitt and Graham, 67 cents; Healdton, 52 cents."

The Magnolia Petroleum Co. made the following announcement applying to North Louisiana and Arkansas: "Effective November 4, 1931, at 7 a. m., and until further notice our prices on crude oil in the States of Louisiana and Arkansas will be as follows per barrel at the wells: Louisiana—Bull Bayou, 83 cents; Haynesville, 65 cents; Pine Island, 73 cents; Cotton Valley, 61 cents. Arkansas—El Dorado, 63 cents; Rainbow, 63 cents; El Dorado East Field, 55 cents; Smackover, 55 cents."

The White Eagle Oil Corp., effective November 2, posted the following prices in Kansas: Group 1—Eastborough, Wright, Robbins, Greenwich, Lorena and North Greenwood Pools, 85 cents; Group 2—Eastman, Fox-Bush and Keighly, 85 cents; Group 3—Smock, Sluss, Leon-Weaver, Peabody and Rock, 81 cents; Group 3A—Ritz-Canton, 79 cents; Group 4—Urschell, Florence, Elbing, Nuttle-Koogler, 77 cents; Augusta, 77 cents; Group 5—Gelwick, 61 cents.

Column 1—Led by Continental Oil Co., effective November 2, and adopted by other purchasers on same day, excepting that the Carter Oil Co., Gypsy Oil Co. and Pure Oil Co. started their schedule at below 25 degrees, 53 cents; 25 degrees, 55 cents, with 2 cents added for each degree upward to 40 degrees and above at 85 cents.

Column 2—Led by Continental Oil Co., effective November 2, and followed on same day by other purchasers.

Column 3—Led by Humble Oil & Refining Co., effective November 2.

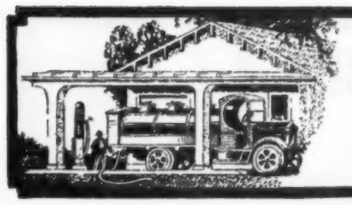
Column 4—Led by The Texas Company, November 2, followed by Humble Oil & Refining Co., Gulf Pipe Line Co. and H. F. Wilcox Oil & Gas Co. same day.

Column 5—Led by The Texas Company, November 3, followed on same day by Humble Oil & Refining Co. and Gulf Pipe Line Co.

Column 6—Midwest Refining Co., November 2.

Column 7—Standard Oil Co. of Louisiana, November 4, 1931; The Texas Company, Gulf Refining Co. and Louisiana Oil Refining Co. same day.

Column 8—Led by The Texas Company, followed on same day by Humble Oil & Refining Co., Vacuum Oil Co., Gulf Pipe Line Co. and Sun Oil Co., but two last named companies' schedules stop at 35 degrees and above at 81 cents, and the Sinclair Refining Co., but latter company's schedule stops at 31 degrees and above at 71 cents.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Jan. 5

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Omaha	14.9	15 9	4 0	9 25
McCook	17 0	17 0	4 0	7 5
Norfolk	16.75	17.75	4 0	9.75
N. Platte	17 75	18.75	4 0	10.50
Scottsbluff	17.0	17.0	4.0	9.0

Note—Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade), 1 cent off normal service station price.

PACIFIC COAST TERRITORY

Standard Oil Co. of California

	Gasoline			Kero.
	Tank truck	Posted retail	Incl'ds tax of	tank wagon
Fresno	12.5	16.5	3 0	17.0
San Francisco	12 5	16.5	3 0	15 5
Los Angeles	12 0	16.0	3 0	15.5
Reno, Nev.	16 0	20 0	4.0	19 0
Portland, Ore.	14 0	18 0	4 0	16 5
Seattle, Wash.	15.0	19 0	5.0	16.5
Tacoma	15 0	19.0	5 0	16.5
Spokane	18 5	22.5	5 0	20 5
Pheonix, Ariz.	14 5	17 0	5.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Albany, N. Y.	16 6	17 6	2.0	15.6
New York*	12 3	14.3	2 0	14 3
Buffalo	15.8	15 8	2 0	14.8
Rochester	16 0	16.0	2.0	14 0
Syracuse	16.8	16.8	2 0	14 8
Boston, Mass.	16 5	16.5	3 0	13 5
Augusta, Me.	13 8	15.8	4 0	14 8
Manch'tr, N. H.	18.4	18 4	4 0	14.0
Burlington, Vt.	19.3	19.3	4.0	15.3

*Prices in steel barrels.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
N. Orleans, La.	14 5	14 5	6 0	10.0
Baton Rouge	17.0	17 0	5 0	12 0
Alexandria†	14 5	14.5	6.0	12 0
Lafayette*	18.0	18.0	6 0	12 0
Lake Charles*	16 5	16 5	6.0	12.0
Shreveport	17.0	17 0	5 0	12.0
Knoxville, Tenn.	21.5	21 5	7 0	13 5
Memphis	17.5	17 5	7 0	11 0
Chattanooga	20 0	21 0	7 0	11.0
Nashville	20.0	20.5	7 0	12.5
Bristol	20 0	20 0	7.0	14.0
Lt. Rock, Ark.	18 0	18 0	6.0	11 0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in pariah of Rapides.

Two-cent discount off gasoline and kerosene tank wagon price to dealer and commercial accounts.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	11 8	6.1
V.M.P. naphtha	13 8	7 6
Cleaners' naphtha	15 3	9 1
Stanisol	15 3	9 1

Tank wagon prices f.o.b. Chicago and Whiting, effective Nov. 6.

STANOLIND FURNACE OIL IN CHICAGO

Effective July 1, prices f.o.b. Chicago, tank wagon prices: 1 to 99 gallons, 8 cents; 100 gallons or more, 6 cents.

Stanolex Fuel

Effective May 9, f.o.b. Chicago, tank wagon prices: 1 to 199 gallons, 7 cents; 200 gallons or more, 5 cents. Sinclair met this by bringing down the price of its No. 3.

Fuel Oils

Chicago tank wagon prices (in lots of 400 gallons and over): 35-40 straw distillate, 6 cents; 32-36 gas oil (light zero), 5.5 cents; 32-36 gas oil (industrial), 5.25 cents; 28-30 zero fuel oil, 5 cents; 24-26 fuel oil, 4.25 cents; 18-22 fuel oil, 3.75 cents.

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Chicago	15.0	15 0	3 0	9.0
Decatur, Ill.	15.5	15 5	3 0	9 0
E. St. Louis	14 8	12 8	3 0	8 2
Joliet	15.5	15.5	3.0	9 0
Peoria	15 5	14 1	3.0	9 0
Quincy	15 3	15.3	3 0	8 8
Davenport, Ia.	15 6	13 0	3.0	9 3
Des Moines	13.0	13.0	3 0	8 0
Keokuk	15 5	15 6	3 0	6 3
Sioux City	15 2	15 2	3.0	8 9
Duluth, Minn.	16 6	16.6	3 0	9 9
Mankato	16 2	16.2	3.0	8.0
Minneapolis	14 5	14.5	3.0	9 9
LaCrosse, Wis.	17 3	17.3	4 0	10 0
Milwaukee	16 2	16 2	4.0	8 9
Madison	16.4	16.4	4.0	9 1
Detroit, Mich.	14.6	14 6	3 0	10 7
Grand Rapids	14 8	14 8	3 0	10.6
Saginaw	13 2	13 2	3 0	10 8
Evansville, Ind.	16 2	16.2	4 0	9 9
Indianapolis	16 4	16 4	4 0	10.1
South Bend	16.5	16 5	4 0	8 0
Fargo, N. D.	18 0	18 0	3 0	11 9
Huron, S. D.	17 4	17 4	4 0	10 7
Sioux Falls	16 9	16.9	4 0	10.4
K. C., Mo.	15 0	15 0	3 0	7 6
Springfield*	15.0	15 0	3 0	8 5
St. Louis*	13 9	13 9	2 5	8 3
St. Joseph	10.5	10.5	3 0	7.5
Wichita, Kans.	13 9	13 9	3 0	6 0
Bartlesville, Ok.	14.1	16.1	5.0	7 0

*State tax 2 cents, remainder city tax.

A third grade of gasoline, "Stanolind Blue," is sold at all major points at a price 1½ cents or more below the price on the regular grade.

Effective November 4—New dump discount applicable on all grades of gasoline sold from tank wagon. Any tank wagon customer buying 25 gallons or more at one time will be given 1-cent discount per gallon off tank wagon price at time of delivery. Customers not under contract receive no other discount.

Effective April 15—Discounts on Q.D.A. on 1,000 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 3 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Dallas, Tex.	15.0	16.0	4.0	9.0
Fort Worth	15.0	16.0	4.0	7.0
Houston	14.0	16.0	4.0	8.0
San Antonio	14.0	16.0	4.0	7.0
El Paso	16.0	18 0	4.0	10.0
Texarkana	14.0	16.0	4.0	8.0
Muskogee, Ok.	13.0	14.0	5.0	6.0
Okla. City	15.0	17.0	5.0	7.0
Tulsa	15.0	17.0	6.0	8.0
Ft. Smith, Ark.	*17.5	18.0	5.0	*11.0
Little Rock	*18.5	18.0	6.0	*11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

*Less 2 cents to dealers.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Denver, Colo.	12.0	15 0	4 0	12.5
Pueblo	12.0	15.0	4 0	12 0
Grand Jctn.	18.0	21.0	4.0	14 5
Casper, Wyo.	15.0	18 0	4.0	10 0
Cheyenne	†14 0	14 0	4 0	11 5
Butte, Mont.	17 0	20.0	5 0	16.5
Billings	20 0	23.0	5.0	14.5
Great Falls	21 0	23 0	5.0	16 0
Helena	21 0	24.0	5 0	16 0
Salt Lake, Utah	17 5	20.5	4.0	16 0
Albu'que, N. M.	18 0	21.0	6.0	14.0
Boise, Idaho	21 0	24 0	5.0	18 0
Twin Falls*	20 5	20 0	5 0	18 0

*3½-cent discount off tank wagon to dealers.

†2-cent discount off tank wagon to dealers.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Ohio points	15.0	16 0	4.0	*12.0

Dealers and commercial accounts 2 cents under tank wagon.

*Service station price 13 cents.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Pittsburgh, Pa.	15.0	16 0	3 0	11 0
Philadelphia	14.0	15.0	3 0	11.0
Scranton	15 0	16.0	3.0	11 0
Allentown	15 0	16.0	3 0	11.0
Altoona	15 0	16 0	3 0	11 0
Erie	15 0	16 0	3.0	11.0
Dover, Del.	15.0	16.0	3 0	11.0
Wilmington	15 0	16.0	3 0	11.0
Springf'd, Mass.	14.5	15 5	3.0	10.0
Worcester	14.3	15.3	3.0	8.5
Boston	13 5	14.5	3 0	10.0
Providence, R.I.	11.5	12.5	2.0	8.5
Hartford, Conn.	14.5	15.5	2.0	10.0
New Haven	14 6	15 6	2.0	10.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atlanta, Ga.*	19.0	19 0	6 0	10.5
Augusta	20.0	21 0	6.0	14.0
Macon	20 0	20.0	6 0	12.5
Savannah	19 0	19 0	6.0	13 0
Birm'ham, Ala.	19.0	19.0	6.0	10.0
Mobile	17 5	17 5	5 0	10.0
Montgomery	20 0	20 0	6 0	13.5
Jackson, Miss.	15 5	15 5	5.5	11.5
Vicksburg	18.0	18 0	5 5	8 0
Jack'ville, Fla.	20.0	20.0	7.0	11.0
Miami	21.0	22.0	7 0	13.0
Pensacola	20 0	20.0	7.0	13.0
Tampa	19 0	19.0	7.0	12.0
Lexington, Ky.	17 0	18 0	5.0	12 0
Covington	18 0	19 0	5 0	12.0
Louisville	16.0	17.0	5.0	11.0
Corbin	18 0	19.0	5.0	16.0

A third grade "Kyso Green," is sold at a price generally 2 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents. To Mobile state tax add 1-cent city tax and 2½ cents county tax.

Effective April 2 price to dealers 2 cents under posted tank wagon price.

*An additional discount of 1 cent is offered to dealers here effective October 6.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax of	tank wagon
Atl'tic City, N.J.	15 7	16 7	3 0	11.5
Newark	14 7	15 7	3.0	10 5
Annapolis, Md.	16 2	17.2	4.0	10 0
Baltimore	15.4	16.4	4 0	8 0
Cumberland	17.2	18.2	4 0	12 0
Wash'g'n, D. C.	13 9	14 9	2.0	10 7
Danville, Va.	18 0	19.0	5 0	11 8
Norfolk	16.5	17 5	5.0	10.3
Petersburg	17 5	18.5	5.0	11 8
Richmond	16 5	15 5	5 0	10 7
Roanoke	17.7	16 7	5 0	12 0
Charles'n, W.Va.	16.7	17 7	4.0	11.5
Keyser	17.3	18 3	4 0	12.1
Parkersburg	15.4	16 4	4 0	10.2
Wheeling	16 6	17.6	4 0	11 4
Charlotte, N. C.	17.5	17 0	6 0	10 7
Hickory	19 3	20.3	6.0	12 6
Mt. Airy	19 7	20.7	6.0	12.5
Raleigh	19 4	20 4	6.0	12 2
Salisbury	19.7	20 7	6 0	12.5
Charleston, S.C	17.5	18 5	6 0	10 3
Columbia	19.4	20 4	6.0	12 2
Spartanburg	19.7	20.7	6.0	12.5

Two cents per gallon discount off retail tank wagon price of gasoline to dealers except Washington, D. C., and States of Maryland and New Jersey, where discount is 3 cents.

TANK WAGON CHANGES

Standard Oil Co. of Kentucky reduced the kerosene tank wagon price to 10½ cents in Atlanta, Ga., December 15. On December 16 the gasoline tank wagon and station prices were advanced to 19½ cents in Mobile, Ala. On December 17 these prices were reduced in Montgomery, Ala., to 20 cents. On December 19 these prices were reduced to 15½ cents in Jackson, Miss., and on the same date the station price was reduced to 20 cents in Jacksonville, Fla. On December 21 the tank wagon and station prices were reduced to 19 cents in Tampa, Fla.

Standard Oil Co. of Louisiana posted a general advance in the gasoline tank wagon prices throughout Louisiana, Tennessee and Arkansas as shown in the accompanying table as of December 31. On December 25 the gasoline tank wagon and station prices were reduced to 19 cents and 20 cents in Bristol, Tenn.

Standard Oil Co. and Standard Station, Inc., reduced the gasoline tank truck and retail prices to 14 cents and 20 cents in Reno, Nev., December 29. On the same date the retail price was advanced to 17 cents in Phoenix, Ariz. On that date a revision in the discount rate was made as shown in the accompanying tabulation of prices.

Standard Oil Co. of Indiana reduced

(Continued on Page 87)

CRUDE OIL PRICES

(Continued from Page 77)

Elk Basin (Nov. 3, 1931)	1.00
Lance Creek (Aug. 24, 1931)	1.00
Poison Spider (Mar. 5, 1931)	.70
Notches (Mar. 14, 1927)	.65
Hudson (June 2, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage (Apr. 15, 1931)	.91
Lost Soldier (Nov. 3, 1931)	.60
Hamilton Dome (Nov. 3, 1931)	.45
Greybull (Nov. 3, 1931)	1.00
Cat Creek (Nov. 3, 1931)	1.00
Pondera (Nov. 3, 1931)	.90
Sunburst, Mont. (Nov. 3, 1931)	1.00
Hogback, N. Mex. (Aug. 24, 1931)	.80
Lea County, N. Mex. (Nov. 3, 1931)	.60
Border, Mont.	1.00
Red Coulee, Alberta	1.50
Dry Creek, Mont. (Aug. 24, 1931)	1.00
Maljamar (Aug. 22, 1931)	1.00
Artesia-Jackson (Nov. 3, 1931)	.50

Note—Salt Creek, Cat Creek, Dry Creek Dallas-Derby, Hudson, Greybull and Hogback posted by Midwest Refining Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro Oil & Refining Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Nov. 2, 1931)‡	$ .60
Luling (Nov. 2, 1931)†	.45
Mirando (Nov. 2, 1931)†	.75
Pettus (Nov. 2, 1931)*	.60
Salt Flat (Nov. 2, 1931)*	.60
Thrall‖	
Lytton Springs (Lockhart) See gravity table	
Dobrowolski‖	
Same as Mid-Continent gravity scale up to and including 38-38.9°.	
Somerset‖	
Same as Mid-Continent gravity scale up to and including 38-38.9°.	

‡The Texas Company. *Humble Oil & Refining Co. †Magnolia Petroleum Co. §Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ‖Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products. ‖Pioneer Oil & Refining Co.

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective November 3, 1931)

Lima	$1.00
Wooster	1.15
Illinois	.91
Indiana	.60
Princeton	.91
Plymouth	Shut in
Western Kentucky	.90
Midland, Mich. (Oct. 9, 1931)*	.55
Dundee, Mich.†	
Same as Stanolind Crude Oil Purchasing Co.'s Mid-Continent gravity scale	
Upper and Lower Traverse Sands, Mich.†	
....Same as Mid-Continent gravity scale	
Somerset, Ky. (Nov. 4, 1931)	.80
Hart County, Ky. (Nov. 1, 1931)‖	.80

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment ‖Posted by Stoll Refining Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and delivered through its own pipe line.

MEXICO

Panuco*	$ .45

*F.o.b. ship, based on October transactions and exclusive of production and export taxes and bar dues.

CANADA

Ontario (Nov. 3, 1931):	
Petrolia*	$1.80
Oil Springs*	1.97
Alberta (Aug. 24, 1931):	
Turner Valley†:	
Crude oil 45-45.9	2.80
Crude oil 50 and above	2.60
Crude naphtha	2.13
Discolored naphtha	2.80

*Imperial Oil, Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

Of Interest to Sales Departments

State Gasoline Tax Reports Reflect Increase in Demand

Gasoline consumption in 47 states and the District of Columbia for the month of October, 1931, as indicated by reports made by wholesalers and dealers in the various states, under provisions of the gasoline tax laws or gasoline inspection laws, totaled 1,343,129,000 gallons, compared with 1,299,031,000 gallons in October, 1930, an increase of 44,098,000 gallons, or 3.4 per cent. Daily average consumption for October, 1931, was 43,327,000 gallons, compared with a daily average of 45,506,000 gallons in September, 1931, a decrease in daily average during October of 4.8 per cent.

Gasoline consumption in these 47 states and the District of Columbia for the 10 months ending with October, 1931, amounted to 12,713,745,000 gallons, compared with 12,157,466,000 gallons for the corresponding period of 1930, an increase of 556,279,000 gallons, or 4.6 per cent.

GASOLINE CONSUMPTION BY STATES, OCTOBER, 1930

	Month of — Oct., 1931 gallons	Oct., 1930 gallons
Alabama	14,026,000	14,907,000
Arizona	6,208,000	6,335,000
Arkansas	10,132,000	12,765,000
Colorado	14,985,000	14,930,000
Connecticut	22,192,000	20,328,000
Delaware	3,490,000	3,225,000
Dist. of Columbia	8,508,000	7,414,000
Florida	18,218,000	17,490,000
Georgia	19,592,000	19,569,000
Idaho	5,640,000	5,952,000
Illinois	93,494,000	90,360,000
Indiana	42,449,000	†42,423,000
Iowa	35,224,000	35,592,000
Kansas	30,568,000	29,361,000
Kentucky	16,060,000	15,426,000
Louisiana	17,394,000	16,397,000
Maine	11,548,000	11,065,000
Maryland	17,382,000	16,929,000
Massachusetts	53,781,000	48,395,000
Michigan	70,327,000	70,424,000
Minnesota	40,067,000	37,717,000
Mississippi	*11,221,000	1*,590,000
Missouri	43,372,000	40,623,000
Montana	6,945,000	7,370,000
Nebraska	19,880,000	19,702,000
Nevada	2,006,000	1,633,000
New Hampshire	6,736,000	6,020,000
New Jersey	50,865,000	48,690,000
New Mexico	4,410,000	4,864,000
New York	149,129,000	136,503,000
North Carolina	24,974,000	22,563,000
North Dakota	9,629,000	10,329,000
Ohio	86,548,000	87,758,000
Oklahoma	25,138,000	27,196,000
Oregon	14,670,000	15,197,000
Pennsylvania	101,436,000	91,702,000
Rhode Island	8,597,000	7,760,000
South Carolina	10,718,000	10,815,000
South Dakota	11,129,000	11,705,000
Tennessee	19,009,000	20,750,000
Texas	70,948,000	66,242,000
Utah	4,918,000	5,320,000
Vermont	5,002,000	4,799,000
Virginia	22,955,000	22,348,000
Washington	22,483,000	22,560,000
West Virginia	14,044,000	13,663,000
Wisconsin	41,639,000	41,187,000
Wyoming	3,493,000	3,138,000
Total	1,343,129,000	1,299,031,000
Daily average	43,327,000	41,904,000
Increase over previous year:		
Amt. of increase.	44,098,000	
Percentage increase in daily average.	3.4%	

*Estimated. †Revised.

SCORES BILL DOUBLING TAX

WASHINGTON, D. C., Jan. 4.—Vigorous condemnation of the bill passed by the House of Representatives to double the District of Columbia gasoline tax is voiced in a report to the advisory board of the District of Columbia division of the American Automobile Association submitted by a special committee on motor vehicle taxation.

The committee brands as "that most obnoxious of all practices" the proposal to levy upon motorists taxes which would be diverted to purposes other than street and highway construction and maintenance.

GOVERNMENT DATA SHOW DECLINE IN FUEL AND GAS OIL DEMAND

Deliveries of gas oil and fuel oil during 1930, as reported to the U. S. Bureau of Mines, Department of Commerce, by oil refining and marketing companies, totaled 385,080,162 bbls., including exports and shipments to noncontiguous territories, as compared with 411,149,930 bbls. in 1929; 397,660,095 bbls. in 1928; 381,662,801 bbls. in 1927, and 372,650,767 bbls. in 1926. A decrease of 23,368,820 bbls., or 6.28 per cent, was reported in deliveries within the United States, while shipments to foreign countries and noncontiguous territories decreased 2,700,948 bbls., or 6.90 per cent. The net result is a total decrease in domestic and foreign deliveries of 26,069,768 bbls., or 6.34 per cent. This decrease is the first recorded during the five years covered by this series of fuel oil surveys. The 1930 report has just been completed by the Bureau of Mines.

Notwithstanding an adequate supply and low prices, the demand for gas oil and fuel oil decreased sharply in 1930. Nearly every industry used less fuel oil in that year. The only increases were in steamships, the food industry, the heating trade, and the U. S. Navy and Army transports. Economic conditions, together with the growing competition of other sources of energy, such as natural gas and electricity, were important factors which brought about a smaller demand for fuel oil in 1930.

The increased use of oil for the heating of buildings during recent years has been particularly noteworthy. The demand for furnace and other oils used in the heating of homes has expanded yearly, being in 1930 about nine times as large as in 1923. The combined 1930 demand for commercial and domestic heating was equal approximately to two-thirds of the quantity burned as fuel in general manufacturing. The annual requirement of oil for the heating of buildings, consequently, has become one of the major items of fuel oil demand.

The reduced demand for oil fuel in 1930 was evident in all the marketing areas of the country, except in the South Atlantic states where a gain of 4.59 per cent over 1929 is recorded. The Pacific Coast area, as in previous years, continued to be the largest market for oil fuel, followed by the South Central and Middle Atlantic regions. Exports and shipments to noncontiguous territories, which reached their greatest volume in 1927, were also less in 1930 than in 1929.

Competition Increases

The deliveries in the Pacific Coast states were about 7,793,000 bbls. under the 1929 total, although the percentages of the national demand were practically the same. The demand by railroads and gas and electric power plants in this section for gas oil and fuel oil fell off sharply in 1930. Due to business conditions and a wider use of natural gas as a fuel, declines in deliveries of fuel oil to certain manufacturing groups and for the heating of buildings in this area were also marked in 1930. On the other hand, steamships operating in the Pacific Coast area increased their use of fuel oil in 1930. A few industries of the Pacific Coast states, such as chemicals, automotive and textiles, showed a greater use of fuel oil in 1930 than in 1929.

In the South Central states, where natural gas is widely distributed, deliveries of gas oil and fuel declined 9,638,000 bbls., or 9.86 per cent, in 1930 as compared with 1929. Railroads, steamships and petroleum refineries, the largest consumers of oil fuel in this section of the country, used considerably less fuel oil in 1930 than in the previous year. Gas and electric power plants, as well as many of the manufacturing industries, also required smaller amounts of gas oil and fuel oil in 1930. Gains in demand for fuel oil in 1930 were made by the paper and wood pulp, logging and lumbering, cement, lime and food industries of the South Central states, while the heating of buildings, both commercial and domestic, also offered a larger market.

Although there was a decline in the use of fuel oil in the Middle Atlantic states in 1930, the difference was not so marked as in other sections of the country. Railroads and steamships required about the same quantity of fuel oil in 1930 as in 1929, while gas and electric power plants used about 599,000 bbls., or 6.66 per cent, more than in 1929. Fuel oil used by petroleum refineries and that necessary in the heating of buildings was greater in volume in 1930 than in the previous year. The fuel oil demand of the iron and steel mills operating in this area dropped noticeably in 1930, while smelters and mines recorded a gain of 10.39 per cent. Most manufacturing industries, except the automotive and ceramic, decreased their requirements for fuel oil in 1930.

In the North Central states, railroads, steamships, gas and electric power plants and all industries, with a few exceptions, required less fuel oil in 1930 than in 1929. The chemical and food industries, the heating trade and fuel oil used at petroleum refineries showed a gain in 1930.

New England States

About 1,200,000 bbls. less of gas oil and fuel oil was delivered in the New England states in 1930 than in 1929. This net loss is reflected in the smaller quantities required by steamship lines, gas and electric power plants and the manufacturing industries in general, including petroleum refineries. Gains in demand for oil fuel were recorded by New England railroads, iron and steel mills and in the heating of buildings.

Deliveries of fuel oil in the South Atlantic states were 10,410,000 bbls. in 1930, a gain over the 1929 total. The railroads, steamships, smelters, and mines, and several manufacturing industries of this section required more fuel oil in 1930 while gas and electric power plants and petroleum refineries used less than in 1929.

In the Rocky Mountain states the smaller demand for gas oil and fuel oil in 1930 by railroads, gas and electric power plants, smelters and mines, iron and steel plants and the petroleum industry resulted in a net loss in total deliveries of over 1,000,000 bbls. for the year. Copies of the report, "National Survey of Fuel Oil Distribution for 1930," may be obtained from the U. S. Bureau of Mines, Washington, D. C.

FRANCE LARGE COKE BUYER

The French market is still largely dependent upon the United States for petroleum coke, according to Assistant Trade Commissioner Earle C. Taylor, at Paris. It has been estimated that French requirements average slightly over 15,000 metric tons a year; exact figures can not be reached as import statistics classify petroleum coke and hard pitch together. Demand is largely from the French aluminum industry, which uses between 13,000 and 14,000 tons a year. A much smaller market—300 to 400 tons—is offered by the graphite electrode industry, and there is some demand for dyeing, rayon manufacture, and other processes.

Operators of Service Stations in Wisconsin Adopt Regulations

CHICAGO, Jan. 4.—The board of directors and licensees of the Dixie Distributor Corp. in Wisconsin met in Oshkosh, Wis., December 28, 1931, to make readjustments within the organization of independent service station operators and eliminate differences which have caused friction between the directors and licensees. By secret ballot seven licensees were elected from among the member units to become stockholders and directors. The affairs of the corporation in Wisconsin will be managed by this board, starting January 1, 1932. The term of office for each director is three years after the first board has completed tenure according to the following plan: Two members of the first board will serve one year; two members will serve two years, and three members will serve three years. Officers will be elected by directors and bonded where required.

The principal feature of the new regulations, according to the present officers, is the definite right and standing of each individual licensee in the organization. The licensee, by ballot, designates who shall become a director and the director in turn must furnish quarterly reports, consisting of a complete and general statement of the business of the corporation during the preceding quarter, including a report of the financial condition of the corporation. All reports are to be mailed to the licensees within 15 days after the close of the quarter. In addi-

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THE TEXAS CO. ASKS AID LOCATING TAX EVADERS

The Texas Corporation has issued a statement to its stockholders regarding tax evasion on the part of marketers and asks their help in locating and punishing those who make a practice of evading the payment of gasoline taxes at the expense of the marketers who pay the tax but who must compete with the evaders in the sale of motor fuels. The Texas Company's statement in part follows:

"The public suffers in that inferior products are sold at low (tax-free) prices and the road building program, the ostensible reason for gasoline taxes, is threatened."

"The oil industry is aggressively working toward a solution, but we must have the assistance of the industry's stockholders, as well as the public at large," the statement says, adding by implication that money not collected by the states because of gasoline tax evasion must be made up through other tax measures, ultimately burdening the taxpayer with the deficiency arising through the gas tax evasion.

"Vigorous protest should be made to the legislators who have established this tax, and who, even now, in many states are considering an increased tax," the stockholders are told. "Either the tax must be enforced or it must be repealed and if these cannot be effected immediately the levy must be reduced to such a point that its evasion will not finance 'public enemies.'"

The statement charges that the devious methods of the racketeer have forced some states to guard their navigable waters with armed patrol boats and others to enlist the aid of the state police to cope with the smugglers.

"This program may take some little time, but in the meantime motorists can, in some measure, work toward their civic duty by acting with extreme caution in the purchase of any gasoline offered at bargain prices," the company urges.

Tax Refunds Better Prairie's Position

Amount Remitted to Prairie Pipe Line Approximates 44 Cents Per Share. Other Companies Receive Refunds. S. O. Indiana Reduces Debt

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Jan. 4.—Tax refunds for the fiscal year 1931, announced by the Treasury Department this week, include remissions to a number of oil companies, chief of which is the Prairie group. Refunds to the Prairie Pipe Line Co. total $1,784,494, which is equivalent to close to 44 cents per share on the outstanding stock of that company. Prairie Oil & Gas Co. receives a refund of $531,740, and its subsidiary, Prairie Oil & Gas Co. of Parco, Wyo., gets a refund of $31,924.

Numerous other tax refunds were announced to various interests in the petroleum industry, some of which were as follows:

Blue Ribbon Oil Development Co., dissolved, Ray Jarvis, Walter Andrews and O. A. Zollinger, trustees for the stockholders, Shawnee, Okla., $53,137.08. Joshua S. Cosden, $56,198.13. Magnolia Petroleum Co., $138,519.33. Theta Oil Co., Chicago, $269,383.49. Orlando Petroleum Co., Topeka, Kans., $98,195.47. International Refining Co., Sunburst, Mont., $28,885.32. Honolulu Consolidated Oil Co., San Francisco, $500,765.98. Wyoming Associated Oil Corp., $77,251.35. Atlantic Lobos Oil Co., $100,369.48. Atlantic Refining Co., $69,874.77. Kendall Refining Co., $27,110.84. Oil Creek Refining Co., $6,575.54. Riverside Western Oil Co., Pittsburgh, $41,483.40.

Indiana Cutting Debt

"Standard Oil Co. of Indiana subsidiaries which have funded debt outstanding have been steadily whittling down their senior obligations and have taken advantage of the weak state of the bond market to purchase their bonds for cancellation," says the Wall Street Journal. "Only three subsidiaries, Stanolind Crude Oil Purchasing Co., Stanolind Pipe Line Co., and Pan American Petroleum & Transport Co. have funded debt outstanding.

"The Indiana company has never resorted to bond financing, and such funded debt as appears in its consolidated balance sheet as of December 31, 1930, represents that of companies which have been acquired. At the close of last year there was a total of $57,879,367 of funded and long-term debt, of which $39,021,000 was 5½ per cent bonds of Stanolind Crude Oil Purchasing Co., due January 1, 1938; $13,174,500 was 5 per cent bonds of Stanolind Pipe Line Co., due October 1, 1942; and $5,210,000 was Pan American Petroleum & Transport Co. 6 per cent bonds, due November 1, 1934."

Market Recovers

While forced liquidation still continues in some division of the stock market, and oil shares are still involved in this selling, the general tone of the market has shown a turn for the better, and the general market has shown some recovery during the past week. Substantial blocks of leading companies in the Standard Oil group have been thrown on the market in recent weeks, and this selling, as much as general stock market conditions, has had a pronounced tendency to unsettle prices for oil stocks.

With further curtailment of crude production already achieved, however, and indications pointing to continued co-operation within the industry in the campaign to balance production with stocks, the earnings outlook for the industry is greatly improved, and there has already developed some buying of the dividend payers in the oil securities groups.

While the outlook for continuance of dividends is naturally uncertain in the case of a number of companies, the current yield of some oil stocks, as is the case with other security groups, is all out of line with present selling prices for these stocks, and investors who are financially able to take a "long" position are giving the oils serious consideration when coming into the market.

J. Howard Pew's Opinion

PHILADELPHIA, Pa., Jan. 4.—J. Howard Pew, president of Sun Oil Co., while warning against predictions about so unpredictable a business as petroleum, ventures the opinion that one development of 1931 will some day be recalled as a milestone on the road to progress. He said:

"I refer to the acceptance by the American Petroleum Institute of the principle that the right to produce oil from a given pool shall be measured on an acreage holding basis. If this principle shall be adhered to and if fundamental changes shall be secured in existing laws definitely establishing it, I believe it will mark a long advance toward rationalization and stabilization. Experience has shown how difficult is the attainment of substantial uniformity in state laws, even when most desirable. Nevertheless the more tolerant and understanding attitude of the public and of law makers toward the industry in recent time warrants us in hoping for accomplishment in that direction.

"The industry and the public have recently begun to realize the demoralization that inevitably follows excessive gasoline taxes. Many states have fixed these so high that they present an irresistible temptation to the tax evader, who, if he can collect the tax from the consumer but escape paying it over to the state, can pocket it. Added to his profits, it becomes a premium on dishonesty, a means to corrupt officials and a penalty against the honest dealer who pays his taxes. Unless this evil is curbed it will presently demoralize the marketing side of the industry, as badly as unregulated production has demoralized the producing side.

"The industry has every reason to favor road development; it has never opposed gasoline taxes at such a rate that they can be enforced. A moderate tax does not offer enough profit to warrant lawbreaking. But experience shows 3 cents is the limit of safety. Above that, the law of diminishing returns is invoked, and the gasoline bootlegger comes in to kill the goose—or steal the golden egg."

H. M. Dawes' View

CHICAGO, Jan. 4.—The petroleum industry has had a satisfactory volume of business during the past year, according to Henry M. Dawes, president of Pure Oil Co.

"The matter of making reasonable profits on the investments and operations is the obvious one of price," he continued, "and in the last analysis comes back to control overproduction. The problem of securing control over production in the oil business is different from that of most other industries on account of the periodical discovery of new fields, which has the effect of producing emergencies which are of comparatively short duration, but in the present instance has been longer than the industry has ever experienced previously.

"The industry and the public are recognizing the emergency nature of the situation, and it is reasonable to suppose that with the general support which already has developed, it will be possible within the year to devise, through co-operation of the industry and the controlling powers in the various states and federal Government, measures which will put production on a proper relationship with consumption more rapidly than uncontrolled exhaustion has in the past.

"In a word, the very acuteness of the situation is bringing about its cure."

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Apr. 29	20.54	Sept. 2	22.30
May 6	20.74	Sept. 9	20.28
May 13	20.38	Sept. 16	18.30
May 20	19.25	Sept. 23	17.64
May 27	18.35	Sept. 30	15.83
June 3	18.00	Oct. 7	15.86
June 10	19.62	Oct. 14	16.43
June 17	19.23	Oct. 21	17.58
June 24	22.33	Oct. 28	16.80
July 1	22.32	Nov. 4	18.86
July 8	21.24	Nov. 11	18.76
July 15	19.79	Nov. 18	17.60
July 22	21.33	Nov. 25	16.65
July 29	20.68	Dec. 2	16.09
Aug. 5	20.80	Dec. 9	15.33
Aug. 12	21.00	Dec. 16	12.60
Aug. 19	24.25	Dec. 23	12.06
Aug. 26	23.26	Dec. 30	12.31

CHARLES A. REDDING DIES AFTER A BRIEF ILLNESS

Charles A. Redding, for many years shop superintendent at the Tulsa plant of Lee C. Moore & Co., passed away after a short illness at Morningside Hospital, Tulsa, Tuesday morning, January 5. Mr. Redding was first taken ill Christmas day from an infection that was not considered serious but by New Years it had so developed that he was removed to the hospital. He was 57 years old.

Mr. Redding was raised in the oil country of the East and worked in all of the important fields of Pennsylvania, West Virginia, Ohio and Indiana and some 20 years ago came west with the Prairie Oil & Gas Co. during the days of activity in the Glenn Pool. He has been with Lee C. Moore & Co. for the past 15 years, traveling extensively in their interests and was well known to oil men in all parts of this country as well as some foreign countries.

Mr. Redding is survived by an adopted daughter.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending Dec. 26)

1931 High	1931 Low	Week ended Dec. 26 Sales	Week ended Dec. 26 High	Week ended Dec. 26 Low	Close Dec. 30	Stocks—	Outstanding capital	Par value	Div. rate	Payable or last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1	⅛	400	⅛	⅛	..	Atlantic Lobos	499,448	N.P.	....	5-28-30	..	..	..	..	1	¼
16	6	50	6	6	6	Borne Scrymser	$1,000,000	$25	....	10-15-30	56½	44½	46½	25	25	11¼
56	31	200	33	31	..	Buckeye Pipe Line	$10,000,000	$50	$1Q	12-15-31	76	53	74½	55	69	39⅞
129½	75	300	75	75	..	Chesebrough Mfg.	$3,000,000	$25	$1Q‡	9-30-31	161	117	210	130	184⅞	104¼
3⅞	1⅝	7,800	2⅛	2	1⅞	Creole Petroleum (sh)	5,977,872	N.P.	....	.....	17½	9½	11¾	5⅝	7⅞	3
39	20⅝	150	27½	26½	..	Cumberland Pipe Line	$1,500,000	$50	50eQ	6-15-31	114	67	75¾	40	65¾	20¼
36	19	150	22	20½	..	Eureka Pipe Line	$5,000,000	$100	$1Q	11- 1-31	88	64½	70½	40	54¾	26
3	1	700	1	1	..	Galena Signal Oil	$16,000,000	$100	....	.....	13	4¼	6½	3	7	2½
72	44¼	4,900	46½	45½	44½	Humble Oil & Refining	$74,103,300	$25	50eQ	1- 1-32	114¾	59½	128	74⅛	119	57¼
18¼	7⅜	4,600	8¼	7⅝	..	Imperial Oil of Canada (new) (sh)	25,421,768	N.P.	12½cQ	12- 1-31	104	56⅜	41	22	30	15
21⅛	5⅛	500	7	6¼	6½	Indiana Pipe Line (new)	$3,000,000	$10	25eQ	8-15-31	91⅞	74⅜	41⅞	26	41	14½
15½	7⅜	20,500	9	8⅞	..	International Petroleum (new) (sh)	14,247,088	N.P.	25cQ	12-15-31	55	35	30⅜	15	24	11⅜
17⅛	5	400	7⅛	6⅝	6½	National Transit	$6,362,500	$12.50	25cQ	12-15-31	32⅜	19⅜	25⅛	10⅛	22⅜	11½
14½	5⅞	100	7⅞	7⅞	..	New York Transit	$1,000,000	$10	25eQ	10-15-31	75	38½	17½	10	21⅜	10⅛
35½	20	500	31¾	27⅜	..	Northern Pipe Line	$2,000,000	$50	$28A	7- 1-31	69	56½	63	41	54	26¼
15½	5½	No sales	..	..	..	Penn Mex Fuel	$10,000,000	$25	50c	10-31-31	84	28	44½	20	32	12
23⅞	9¼	No sales	..	..	10	South Penn Oil	$30,000,000	$25	25eQ	12-31-31	71⅞	36¾	60¼	35⅛	45⅞	16⅛
17	7	100	7⅝	7⅝	..	Southern Pipe Line	$1,000,000	$10	50eQ	9- 1-31	19	15	22½	13	20⅞	8⅝
42½	25	50	28½	27½	..	Southwest Pennsylvania Pipe Line	$1,750,000	$50	$1Q	12-31-31	102	70	70	60	64	32
38½	13⅝	50,200	16⅛	13⅝	13⅝	Standard Oil of Indiana	$348,175,069	$25	25eQ	12-15-31	95⅞	70⅞	63	45	59⅞	30
23⅝	12⅜	8,300	14¾	12⅝	13	Standard Oil of Kentucky	$25,654,516	$10	40eQ	12-31-31	179¾	122¼	467⅛	29	40½	18⅝
36½	16	580	21	16	..	Standard Oil of Nebraska	$4,649,225	$25	50eQ	12-21-31	54⅞	39⅞	50¼	40	48⅞	34⅜
62½	23	1,250	28¾	23	26¼	Standard Oil of Ohio	$14,000,000	$25	62½cQ	1- 2-32	134	71	129	60	108½	43¾
4½	1	100	1¾	1¾	1⅝	Swan-Finch Co. (sh)	34,480	$25	....	1-15-29	23¼	16	18	10	10	4

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus 50 cents extra.

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.
(Complete record week ending Dec. 26)

1931 High	1931 Low	Week ended Dec. 26 Sales	Week ended Dec. 26 High	Week ended Dec. 26 Low	Close Dec. 30	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1¾	¼	2,800	⅜	¼	¼	American Maracaibo	(sh)	700,000	N.P.	....	.....	9½	3⅛	8⅝	1⅛	4½	½
16⅞	6¼	No sales	..	..	8	British American Oil Corp.		1,311,321	N.P.	20cQ	10- 1-31	55	32¾	62	7⅞	23	13⅜
2⅜	¼	1,200	⅜	¼	¼	Carib Syndicate		$131,250	25c	....	.....	4½	3⅞	4⅞	1	2⅜	⅝
20¾	5	42,000	5¾	5¼	5¼	Cities Service	(sh)	24,290,359	N.P.	30cA§	11- 1-31	90⅞	54	68⅛	20	44¼	13
84¾	35⅜	600	46¼	45½	44	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	11- 1-31	103¼	94½	98¾	84	93⅞	78¼
½	1/16	2,200	⅛	1/16	1/16	Colombia Syndicate		$2,000,000	$1	....	.....	3¼	.76	2	½	¾	⅛
2¾	1	No sales	..	..	..	Consolidated Royal		$5,527,875	$10	5cQ	10-25-31	8⅞	6¼	11⅛	2½	5⅞	2
⅝	⅛	500	¼	¼	..	Crown Central		.....	....	....	.....	..	..	..	..	..	..
5	2	No sales	..	..	2	Darby Petroleum (new)		1,019,392	N.P.	....	10-15-30	33½	3¼	26	6½	21¾	4¼
6	1½	300	2	2	1½	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2¼	1	11	2	11	2
40⅛	25	No sales	..	..	..	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	21⅛	7½	44	20¾	60	30
75½	25⅝	10,700	29¾	26½	26½	Gulf Oil Corp.	(sh)	4,504,921	$25	....	10- 1-31	165	101⅛	209	115	166⅞	58½
⅝	⅛	1,300	1/16	⅛	1/16	Intercontinental Petroleum		$5,682,000	$5	....	.....	3⅜	1	2⅞	⅝	1¾	⅜
1⅞	¼	1,000	¼	¼	..	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	3	1¼	3⅝	1¼	3	⅞
1½	¼	600	¼	¼	¼	Leonard Oil & Development		$50,000,000	$25	....	.....	9⅜	5⅛	6⅞	1	4⅜	½
6¾	1½	No sales	..	..	1⅞	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	43⅞	20	38⅞	18	29	4⅞
25	5½	4,600	7½	7⅛	7⅛	Lone Star Gas	(sh)	5,000,000	N.P.	22cQ	12-31-31	69⅛	48½	67⅞	28	55⅞	19⅝
½	1/16	7,300	⅛	1/16	1/16	Magdalena Syndicate	(sh)	850,000	$1	....	.....	1¾	½	1¼	½	½	⅛
5	1⅞	800	2½	1⅞	..	Margay Oil Corp.		160,000	N.P.	....	7-10-30	48½	32	38½	14	16	3
4⅞	1½	No sales	..	..	..	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	8	2¾	6⅜	2¼	7½	1⅜
½	⅛	No sales	..	..	..	Mountain & Gulf		$4,000,000	$1	....	4-15-31	1⅜	.76	1½	½	⅝	⅜
5⅞	2	1,000	2¼	2	2¼	Mountain Producers		$1,682,182	$10	20cQ	1- 2-32	28⅞	19½	22⅞	7	12⅛	3¾
1½	½	1,800	½	½	½	New Bradford Oil		$1,095,291	$5	....	4-15-31	5⅝	4¼	5	2½	3½	1⅛
3	¾	1,200	⅞	⅞	¾	New Mexico and Arizona		$1,000,000	$1	....	.....	11⅞	7⅛	9⅜	2¼	7¼	1½
3¼	⅝	No sales	..	..	⅞	North Central Texas	(sh)	400,000	N.P.	....	9- 2-30	14¼	8½	18½	6⅛	11¼	2⅛
½	1/16	2,400	⅛	1/16	1/16	Pandem	(sh)	489,875	N.P.	....	.....	6	2⅛	3½	½	2½	¼
2	⅜	400	½	⅜	⅜	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	15⅝	8½	10½	1⅞	4⅜	⅞
3⅛	¼	2,000	½	¼	..	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	12⅞	4⅛	8½	1⅛	5⅜	1
3	⅞	No sales	..	..	⅞	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	12	4⅛	11	2	8⅝	2
1⅜	⅛	500	¼	¼	⅛	Salt Creek Consolidated	(sh)	1,286,300	$10	....	4- 1-31	7¼	5½	5⅞	1⅞	2½	½
7¾	2¾	2,700	3⅜	2¾	3⅛	Salt Creek Producers	(sh)	1,496,859	$10	25c	11- 2-31	35	23⅛	25⅞	9	15¼	5¼
5¼	¼	2,803	1/16	¼	1/16	Sunray Oil	(sh)	1,163,185	$5	....	4-15-31	..	..	12	5⅝	10	2
1⅞	¼	1,900	⅜	¼	..	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	9⅛	4¾	6½	1¾	4½	⅜
3½	1⅛	No sales	..	..	..	Woodley Petroleum		$500,000	$1	....	3-31-29	8¼	4⅞	9½	2	5	½
2¼	¼	200	¼	¼	..	Y Oil & Gas		100,000	N.P.	....	.....	8⅜	2⅛	2⅞	½	2½	⅜

*Ex-dividend. †Unit of trading less than 100 shares. ‡Payable monthly and monthly stock dividend of one-half per cent. §Paid in lieu of regular cash dividend of 2 per cent.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.
(Complete record week ending Dec. 26)

1931 High	1931 Low	Week ended Dec. 26 Sales	Week ended Dec. 26 High	Week ended Dec. 26 Low	Close Dec. 30	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
23	11¼	700	14	13	12⅜	Amerada Corp.	(sh)	922,075	N.P.	50cQ	10-31-31	43⅞	27⅛	42⅝	17½	31½	16½
12⅜	1¼	1,500	1½	1¼	1¼	American Republics Corp.	(sh)	209,180	N.P.	....	12-31-30	85	51⅛	64¾	12½	37	5⅛
31	8¾	30	9	8¾	8¾	Associated Oil		$57,260,300	$25	....	6-30-31	53⅜	37½	47¼	34½	51	30
23⅝	8⅝	13,400	9⅞	8⅝	9	Atlantic Refining		$66,763,775	$25	25cQ	12-15-31	66⅝	50	77⅞	30	51⅜	16⅝
14½	4¼	16,220	4⅜	4¼	4¼	Barnsdall Corp. A		$56,546,600	$25	....	5-11-31	54	20	49⅛	20	34	8⅝
12	5	15,754	6	5½	5¾	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	12-15-27	..	..	47⅞	18	30½	7⅜
47	9⅝	2,000	12¾	11	12	General Asphalt	(sh)	413,333	N.P.	50cQ	12-15-31	94⅞	68	94¾	42¼	71½	22⅜
68½	15¾	2,400	19½	17	17½	Houston Oil		$24,968,600	$100	....	10-17-30	167	79	109	26	116⅞	29¼
4⅝	1⅛	1,600	1½	1¼	1¼	Indian Refining		$12,564,070	$10	....	10- 1-30	39⅝	9	53	13⅛	17	2
4½	1	4,200	1¼	1	1	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	19¾	9⅜	18	7	12	3½
3¾	½	No sales	..	..	..	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	25½	12½	18½	5⅛	10⅜	1⅜
16¾	5	15,600	5⅞	5¼	5¾	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	....	2-16-31	44½	25⅛	39⅞	22⅛	32	11
19½	5⅛	15,400	6	5¼	5¾	Ohio Oil	(sh)	6,648,052	N.P.	....	3-14-31	84	58½	79⅞	64¼	32	16
35⅛	20	No sales	..	..	..	Pan American P. & T.		$50,084,700	$50	40c	1-20-31	50⅞	38¼	69	40½	46½	42
36½	18	1,100	19	18¾	18	Pan American P. & T. "B"		$121,110,650	$50	40c	1-20-31	59⅞	37¾	69¼	40½	67¼	30
4¼	⅝	No sales	..	..	..	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	21¾	11½	15¼	3	12¾	1¾
20⅛	5	30	5	5	..	Panhandle P. & R. pfd.		$2,564,400	$100	....	.....	108	70	76	47½	20	47½
16⅝	4	18,136	4⅞	4⅛	4¼	Phillips Petroleum	(sh)	2,593,075	N.P.	....	1- 2-31	53⅞	35¼	47	24¼	44⅝	11½
1½	¼	1,600	⅝	¼	¼	Pierce Oil Corp.		$29,622,831	$25	....	.....	5¼	½	3⅜	1	2½	½
3⅜	½	2,000	¾	⅝	⅝	Pierce Petroleum	(sh)	2,500,000	N.P.	....	2-16-31	7	3½	5⅞	½	7⅛	1⅛
20⅜	4⅝	7,500	6	4	5	Prairie Oil & Gas		$60,848,000	$25	....	3-31-31	68	46	65⅜	40½	54	11¼
26½	5⅞	30,800	7	5⅞	6⅝	Prairie Pipe Line		$101,250,000	$25	....	6-30-31	280	172	65	45	60	16⅝
6	1	900	1¼	1⅛	1⅛	Producers & Refiners		$37,438,950	$50	....	9-15-23	20⅞	16	25⅞	4	11⅞	1
16	3	100	3½	3⅛	3½	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	49⅝	41	46¾	25½	40	11½
11⅞	3¼	62,000	4¼	3¾	3⅞	Pure Oil		$75,959,250	$25	....	9- 1-30	31⅝	19	30¾	20	27¼	7⅝
6⅜	⅝	1,600	½	⅝	⅝	Richfield Oil (new)		$52,410,875	N.P.	....	.....	56	23	49⅝	20	9¾	4⅛
10¼	1¼	4,762	2	1¾	1⅞	Rio Grande Oil	(sh)	1,236,270	N.P.	....	7-25-30	37½	32	42½	15	25¾	5
42⅝	13	14,400	14	13	14⅛	Royal Dutch N. Y.	(sh)	611,303	....	$0.938	8- 4-31	64	44⅝	64	43⅛	56½	36⅞
20¾	5½	4,400	7	6½	6½	Seaboard Oil of Delaware	(sh)	1,244,383	N.P.	....	10- 1-24	72	4⅝	59⅜	8⅛	37	9¾
34	5	50	5	5	5¼	Shell Transport & Trading Co.		£23,985,000	£1	$0.966	7- 6-31	47⅞	41⅜	51½	40⅝	48⅜	26
10¼	2½	9,900	3⅜	3	2⅝	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	39¼	23¼	31¾	19	25½	5¼
11	3½	1,000	4⅛	4	4¼	Simms Petroleum		$8,353,620	$20	....	9-15-30	27½	18⅛	40⅛	15	37	5⅝
15⅞	4⅛	25,700	4⅞	4½	4⅝	Sinclair Consolidated	(sh)	5,500,000	N.P.	....	4-15-31	46⅜	17⅜	45	21	32	9⅜
103	64	200	66	65½	..	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	11-14-31	110	102½	111	103	112¼	86
12⅞	2	5,000	2⅞	2	2½	Skelly Oil		$27,441,250	$25	....	12-15-30	42⅝	25	40½	28	12	10⅛
21	8⅜	55,048	10	8⅞	8⅝	Socony-Vacuum	(sh)	31,923,072	$25	25c	12-15-31	..	..	..	..	..	..
31¾	23⅛	47,600	27	23⅛	24¼	Standard of California	(sh)	12,594,098	N.P.	62½cQ	12-15-31	80	63	81⅞	51½	75	42½
19	7¾	4,300	10⅛	7¾	9⅜	Standard of Kansas		$8,000,000	$25	....	3-16-31	37¾	15	33¾	18	49	14⅜
52½	26	92,790	28¼	26	27¼	Standard Oil of New Jersey		$634,999,200	$25	25cQ§	12-15-31	59⅜	37¾	83	49	84⅞	32½
45¼	26¾	10,866	30	29	29	Sun Oil	(sh)	1,416,869	N.P.	25cQ	12-15-31	77	31½	68⅜	55	70	39
1¾	¼	7,390	⅝	¼	⅜	Superior Oil Corp.	(sh)	766,979	N.P.	....	12-20-30	..	..	24	5¼	9⅜	⅜
36¼	9⅞	32,960	12⅝	11	10⅝	The Texas Corporation		$246,204,900	$25	50cQ	10- 1-31	74⅜	50	71⅞	50	60½	28¼
6½	2	1,400	2⅜	2⅛	2	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	26⅝	12⅛	23⅞	9½	14½	4
18	9⅞	No sales	..	..	..	Tide Water Oil	(sh)	2,191,759	N.P.	....	6-30-31	41½	19⅝	40	14	31	13
83	30	400	35	33¾	33	Tide Water Oil pfd.	(sh)	19,947,000	N.P.	$1.25Q	11-16-31	100⅛	86	97½	85⅛	94⅞	71
9	2⅛	7,800	2⅞	2⅜	2⅛	Tide Water Associated	(sh)	5,560,424	N.P.	....	2-16-31	25	14¾	23½	10	17¾	5⅞
68	20½	2,300	25	23	25	Tide Water Associated pfd.		$73,284,500	....	$1.50Q	10- 1-31	..	..	90⅞	74⅛	89¾	55
28⅝	11	4,500	13	12	12⅛	Union Oil of California		$104,342,375	$25	50cQ	11-10-31	58	42⅜	57	42⅛	50	10⅛
25⅛	16	3,400	16⅛	16	16½	Union Tank Car	(sh)	1,254,048	$100	40cQ	12- 1-31	128⅛	110	163¾	121⅞	38½	23
7⅜	⅞	2,400	1⅜	1	⅞	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	44⅞	26	42⅞	15	27	4¼
9¾	2¾	1,225	3	2¾	2¾	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	29¾	12⅞	21	6¼

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus extra dividend of 25 cents.
In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been stock split-ups.

ROCKY MOUNTAIN AREA

(Continued from Page 40)

ver, which was shut down for the holidays after cementing 6⅝-inch at 3,950 feet, is preparing to resume.

Elbert County

Progressive Oil & Land Co.'s No. 1 Pease, NE SE SW, Section 27-10s-60, near Simla, is shut down at 640 feet and is expected to resume in the spring. An oil man passing this well two weeks ago brought the report to Denver that it was drilling at 3,800 feet. This proved to be incorrect.

Lincoln County

Eastern Colorado Oil Co.'s No. 1 State, SE cor. NW, Section 36-14-57, near Hugo, is cleaning out cave above tools preliminary to sidetracking at a total depth of 3,425 feet.

Park County

South Park Oil Co.'s No. 1 Milligan, NE cor. SE, Section 13-8s-76, Jefferson district, is drilling at 2,631 feet in hard sand with shows of both oil and gas. The driller reports it to be either in the bottom of the Muddy or top of the Dakota. South Park Oil & Gas Co.'s No. 1 Esche, SE cor. NW, Section 5-9s-76, is shut down at 2,442 feet until after the holidays.

Moffat County

Ohio Oil Co.'s No. 1 Bogenschultz, C SE SE, Section 9-6n-91, Craig Dome, has begun spudding with rotary rig. This will be primarily a test for gas, the company having been granted a franchise to supply the town of Craig, 3 miles away. The first objective is a sand in the Wasatch at around 2,700 feet.

Rio Blanco County

The California Co.'s No. 1 California-Raven, NW SE, Section 30-2n-102, Rangely Dome, is drilling at 3,369 feet. This is a rotary test to the Weber sandstone in the Pennsylvanian and may go to 8,500 feet.

Magnolia Petroleum Co.'s No. 1 Maddock, C NW SE, Section 9-2s-96, Piceance Creek, is drilling at 2,247 feet.

Larimer County

Mayer Oil Co.'s No. 1 Reed, SW cor. NW, Section 28-4n-69, Berthoud Dome, has landed 6⅝-inch at 2,296 feet. Total depth is 2,400 feet.

Charles A. Culter and associates have leased approximately 5,000 acres to the south and west of Longmont and announced a test is to be drilled this spring. Location has not yet been made. Texas, Oklahoma and Colorado people are interested in the operation and will move in equipment from the Mid-Continent area. Mr. Culter formerly was president of the Platte Valley Petroleum Corp.

A committee of landowners in Townships 5n-65w and 5n-66w, west of Greeley and between Platteville and Poudre River, headed by H. E. Mann, are taking leases under an agreement to start drilling not later than November 15, 1932. Approximately 8000 acres have been blocked up and the plan provides for 10,000 acres altogether. Leases are being taken in the name of Charles Swink.

WYOMING

Natrona County

Sidney H. Keoughan, former president of the Continental Oil Co., and a group of associates, have acquired the interests of the Midwest Refining Co., the Salt Creek Producers Association and the Mountain Producers Corp. on the Midway and North Geary Domes between Salt Creek and the Big Muddy Field and will carry out the provisions of the cooperative group development agreement under which these two structures and the Geary Dome were opened for prospecting late in 1929. The Geary Dome operation, upon which the Midwest Refining Co. is preparing to resume drilling in its No. 11, SE NW NW, Section 32-34-77, at 5,340 feet, is not included in the deal with the Keoughan interests. The Midway-Geary Syndicate, composed of H. Leslie Parker and associates, will continue to hold its interests in the three structures. Details of the deal have not yet been completed and Mr. Keoughan is in New York in connection with same. One test in No. 11 Muddy, C NE NE, Section 23-35-79, drilled by the Midwest under the group development plan, is producing around 100 bbls. daily from the second Frontier after that sand was cemented off and redrilled five times. The new interests are expected to undertake some additional drilling on this structure, a rig having been erected recently by the Midwest in the C SE SE, Section 14-35-79, as well as putting down a test on the North Geary Dome, for which a location was made by the Midwest for its No. 29, C SW NW, Section 15-35-78.

Wyoming Imperial Oil Co.'s No. 1 Quintet Oil, NW SE, Section 13-33-79, Country Club district near Casper, is rigging up and expects to spud about January 10.

Carbon County

Producers & Refiners Corp.'s No. 4 Wertz Dome, SW cor. SE, Section 7-26-89, is bottomed at 3,541 feet and milling over tool joint.

Washakie County

Ohio Oil Co.'s No. 1 Strothers, SW SE NW, Section 19-45-92, Neiber Dome, is recementing liner preliminary to making another effort to test the second Frontier at 7,465-75 feet, which showed some saturation in the cores. A test last week showed water, which was believed to be coming in from back of the liner. This well was drilled to a total depth of 8,596 feet and plugged back.

Niobrara County

Interstate Oil & Refining Co.'s No. 1, Section 2-39-61, West Mule Creek, a deep test to the Minnelusa, is shut down at 500 feet.

Sublet County

Marvel Oil Co.'s No. 6, Lot 11, NW, Section 3-26-113, South LaBarge, is on top of the sand and showing for a producer. The company has five oil wells and one gas well on this lease producing 200 bbls. per day.

MONTANA

Carbon County

The extension of the Dry Creek Field in Carbon County in the Carbon Oil & Gas Co.'s No. 1 Armstrong, SW cor. NW, Section 7-7s-22, continues to be the outstanding development in Montana. The well has not yet been tested, but it gives every indication of being the best producer so far completed in the field. Later developments are to the effect that the production is coming from the Dakota sand and not the Lakota as heretofore supposed. The top of the Dakota was found at 5,601 feet and was cored 32 feet. Only 14 feet of core showing saturation was recovered and 18 feet was lost. The 8⅝-inch was landed on top of the sand preliminary to cementing when the well began gassing through the rotary mud. The pipe was then pulled back to 5,556 feet and a gate was installed. Then the hole cleaned itself and shot oil to the top of the derrick. The well has been shut in and probably will not be tested until about January 10. The oil is of a light amber color with a reddish tint and is similar to that found in the discovery well, the Ohio Oil Co.'s No. 2 Northern Pacific, a little more than a mile to the west. Four 500-bbl. tanks and a separator are up and other preparations for a test are under way.

The Dry Creek Dome is cut by a fault block and No. 1 Armstrong is to the south of this fault. The discovery well also is south of the fault but believed to be a little closer. No. 1 Armstrong is about 200 feet down structure and the indications point to the sand being thicker than on top. It built up a pressure of 1,030 pounds in 30 minutes, while the discovery well had a pressure of only 450 pounds. The discovery was drilled into the Lakota while No. 1 Armstrong is estimated still to be 70 feet above that sand. The well was drilled with rotary and cable tools, the property of Charles E. Orchard. The wells drilled by the Ohio company to the north of the fault do not appear to be as favorably located as those to the south.

Ohio Oil Co.'s No. 1 Chapman, C SW SW, Section 2-7s-21, which is located to the north of the fault and is the deepest test drilled on the structure, went to the top of the red beds at 6,219 feet and was plugged back to 5,600 feet and is testing the Dakota from which a saturated core was taken.

Ohio Oil Co.'s No. 1 Kuchinski, NW SE NE, Section 15-7s-22, Golden Dome, to the east of Dry Creek, is shut down at 335 feet waiting for completion of water well.

Cascade County

Buscher & Cassidy's No. 1 Johnson, NE cor. SE, Section 19-22-3e, Benton Lake, is setting 6¼-inch at 1,300 feet to shut off sulphur water in the Ellis sand. Charles Merz and others' No. 1 Sheffelt, SE NW, Section 4-21-4e, Black Horse Lake, had water in the Sunburst at 675 feet and is shut down for 8¼-inch pipe.

Teton County

California Co.'s No. 1 Sullivan, NW NE NW, Section 34-27-7w, Bynum district, is shut down at 2,840 feet after cementing cave.

Earl Oil Corp., Ltd.'s No. 1 Gad, SE cor. NE, Section 22-22-8w, Sun River district, is bottomed at 3,720 feet and sidetracking bailer at 3,500 feet.

Toole County

Cosmos Petroleum, Inc.'s No. 1 Iowa Holding, NW NE SE, Section 2-37-4w, Border Field, is drilling at 2,100 feet and close to its objective.

Glacier County

Fulton Petroleum Co.'s No. 1 Blackfeet, SW NE NE, Section 28-36-12w, Milk River district, is shut down at 2,810 feet.

Liberty County

Western Natural Gas Co.'s No. 1 Hicks, C NW NE, Section 26-37-4e, Whitlash district, is bottomed at 1,665 feet and fishing for parted pipe. It swabbed 45 bbls. before lowering of pipe began and apparently opens a new pool.

California Co.'s No. 1 Ross, NE SE NE, Section 3-33-6e, Utopia district, is drilling at 1,300 feet. The Eagle sand at 605-688 feet carried water.

UTAH

An unconfirmed report giving no details is to the effect that the Escalante Explorations, Inc.'s No. 2 Escalante, Section 19-43-15, Bloomington Dome, Washington County, had drilled into a saturated sand and was running casing preliminary to making a test. Last October this well was reported coring at 2,358 feet. Toronto capital provided $100,000 for this test and the Diamond Drill Contracting Co. has the contract.

Maude Ellen Oil Co.'s No. 1 NE NW SE, Section 28-3s-21, Neal Dome, Uinta County, is reported drilling at 2,450 feet in the lower Pennsylvanian with the Madison lime expected at 2,600 feet. A good show of oil was encountered at 2,314 feet. Water was found in a sand in the Triassic at 1,800 feet.

Utah Southern Oil Co.'s No. 1 Balsey, C NE NE, Section 31-23-21, Grand County, is drilling in salt at 5,100 feet. It has cut more than 4,000 feet of practically continuous salt and is headed for the Ordovican beds.

IDAHO

R. J. Berry and others' No. 1 Kramlich, SE NW, Section 5-9n-4w, Crystal Dome, Payette County, is bottomed in its tenth water sand at 4,011 feet and probably will be abandoned. The casing will be ripped to see if any gas is coming in from behind and, if so, it will plug back to a sand at 2,000 feet which showed a little gas, and test.

Pipe Line Runs

Average daily pipe line runs for the week ended January 2:

WYOMING

	Bbls.
Salt Creek	21,740
Badger Basin	50
Big Muddy	1,670
Greybull	10
Dallas-Derby	630
Dutton Creek	70
Elk Basin	640
Ferris	20
Frannie	1,380
Grass Creek	2,160
Hamilton Dome	870
Hudson	450
LaBarge	1,240
Lance Creek	90
Lost Soldier	3,690
Midway	100
Oregon Basin	50
Osage	670
Pilot Butte	0
Rock River	1,740
Poison Spider	60
Total Wyoming	37,330

MONTANA

Buckley-Border	460
Cat Creek	950
Dry Creek	190
Kevin-Sunburst	3,360
Lake Basin	60
Pondera	1,490
Total Montana	6,510

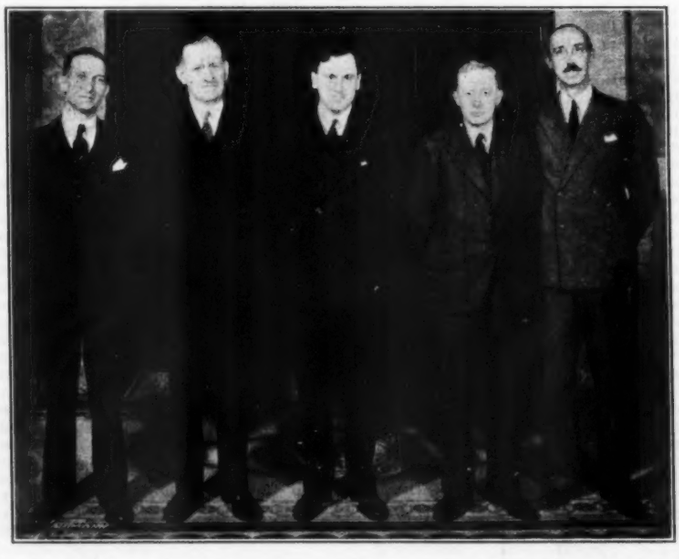
COLORADO

Florence	320
Fort Collins	920
Iles	900
Moffat	760
Orchard	590
Rangely	20
Tow Creek	320
Total Colorado	3,830

NEW MEXICO

Rattlesnake	650
Hogback	420
Table Mesa	80
Artesia	400
Cap Rock	740
Hobbs	37,195
Jal	1,010
Lea City	1,785
Eunice	400
Total New Mexico	41,680
Total Rocky Mountain area	89,358
Total previous week	92,274
Difference	2,916

OFFICERS INTERNATIONAL ACETYLENE ASSOCIATION



Left to right: H. F. Reinhard, secretary; E. J. Hayden, vice president; W. C. Keeley, Jr., president; W. D. Flannery, retiring president, and W. C. Cotter, treasurer.

REMOTE CONTROL WITHOUT ELECTRICITY

(Continued from Page 16)

ing oil to the second pump by the time it is ready for operation. The first pump No. 1, having attained normal speed, draws on the line pulling the crude oil into the pump, thereby further reducing the pressure on the line, which reduction in pressure is recorded upon the gauges at the main station, notifying the operator there that the booster station is now in operation. The discharge gate on the Voshell pumps is then opened and the line will handle approximately 18,200 bbls. which is the limit, using the pumps so far mentioned. If it be necessary to pump more oil, the booster pump at the Voshell station, marked No. 1, is started and the pressure further increased and the flow of oil raised to a maximum of 19,600 bbls. per 24 hours. To obtain maximum pumping capacity of the two stations, all five pumps will be necessary. An actual test of pumping capacity was made, results of which are given in Figure 4. The calculated pressures and capacity were determined before the Burrton station was built and these calculated pressures and capacity are listed in Figure 3. It can be seen from these two tables, how closely the actual conditions check with those determined by calculation.

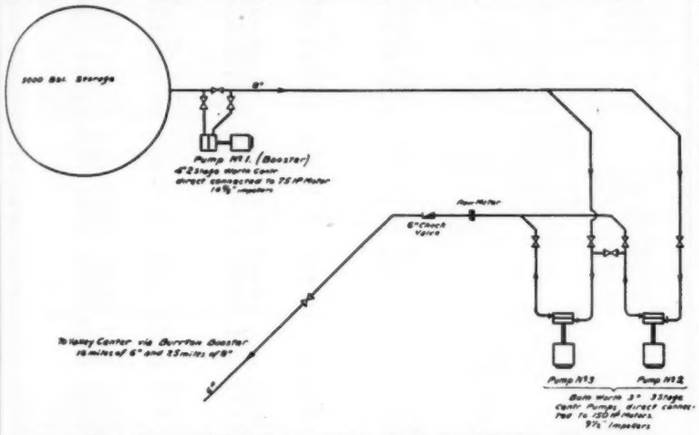


Figure 1—Flow diagram of Voshell pump station. At the Voshell station (Figure 1) the oil taken from storage may be handled through pump No. 1, thence to pump Nos. 2 and 3, which are connected in series, or No. 1 pump may be bypassed and the oil handled directly by pumps No. 2 and 3, either separately or connected in series.

To Shut Down

To shut down Burrton station it is necessary to shut down the 4-inch booster pump at Voshell station, if more than 18,200 bbls. of oil is being pumped, and the No. 2 pump. The discharge gate on the remaining pump is pinched to reduce the pressure and amount of oil being transported. This action at the Voshell has a like reaction on the Burrton station. The flow meter shows this drop in volume of oil being handled, and the pointer on the instrument drops until it passes the low point contact (10,400 bbls.) which, previously mentioned, is connected electrically to the pumping equipment of the Burrton station, tripping relay "b" and breaking the circuit resulting in the tripping on the remaining relays, a, c, and d. The breaking of the contact on all relays immediately stops the motors, shutting down the pumping equipment. When the Burrton station stops the pressure on the crude oil line will start to build up again and this will indicate to the operator at Voshell that the booster station is down. He immediately opens the discharge gate No. 1, Figure 1, and starts the second pump, pressure and volume of crude will be increased until it will reach approximately 13,000 bbls. and about 335 pounds. With this pressure on the line at Burrton, the mercoid pressure gauge will trip open, leaving it in position to perform its purpose again as the primary step in resuming operation of the equipment at the Burrton station, whenever the need may be. With the two main pumps at Voshell on the line, the pressure will increase until the volume handled will be approximately 15,200 bbls. and the pressure about 420 pounds at Burrton station. This station will not resume operation again until the identical conditions, as previously given, are brought about.

Should Break Occur

Steps are being taken at this time to perfect a method to automatically shut down the Burrton station should a break occur in the crude oil line between the Burrton and Valley Center. One other item is the developing of a method of shutting down the Voshell station, should a break occur in the line between the two pumping stations. Another important precaution will be the means of shutting down the 4-inch booster pump at Voshell in the event of the accidental shutdown of the Burrton units, whether this be caused by failure of electric power or from some other reason, in order to prevent the increasing of the line pressure above 800 pounds.

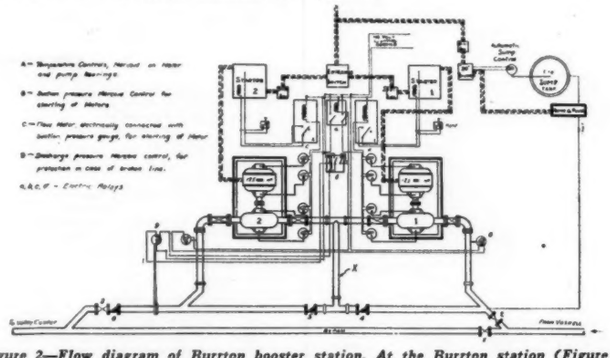


Figure 2—Flow diagram of Burrton booster station. At the Burrton station (Figure 2) are installed only two pumps. These pumps are so piped that the oil may be handled by each one separately or through both pumps connected in series. This station is typically modern in every respect and incorporates in its design the latest technical features.

Each motor and pump is equipped with a special mercoid thermal control electrically connected to the starters of both motors. Should trouble develop in the line, or the oil fail to carry through the line the pump will automatically shut down when the bearings of the pumps reach a certain temperature. This control acts upon individual pumps and in the event of shutdown of unit, it will not affect the operation of the remaining pump.

The 5'x6' sump tank installed at the Burrton station is for the purpose of collecting the oil that leaks from the stuffing box glands of the two pumps. This tank is equipped with a level controlling device known as a mercoid pressure controlled. Should the oil in this tank accumulate until it is within 12 inches of the top of tank, the mercoid controller starts the sump pump connected to this tank and delivers the oil to line ahead of the suction of the pumping units and stops this pump when the oil level is within 24 inches of the bottom of the tank. Operating conditions are most severe as the pressure which this pump must buck varies between 5 and 420 pounds.

It is possible that the design of this booster station will result in a method of control of plants for similar purposes, comparable in so far as results are concerned, with those remotely controlled but which require an enormous investment in controlling equipment. The outstanding feature of this design is the economy of the equipment installed for the purpose of regulating the station's operation. The only connecting link between the two stations is the 6-inch crude oil line.

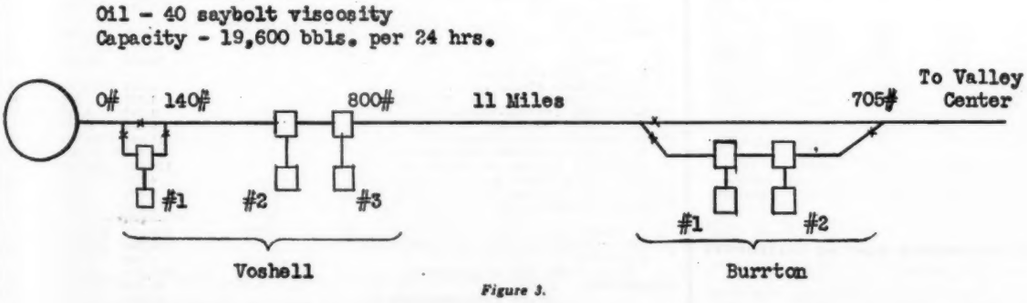
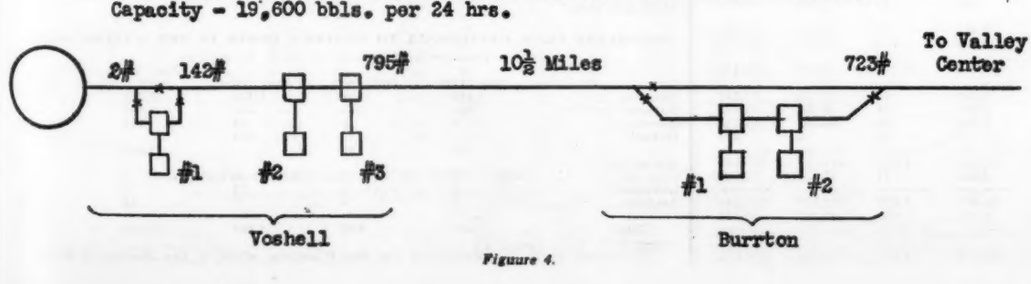


Figure 3.



Figuure 4.

CALIFORNIA ADDS TO STOCKS IN NOVEMBER

(Continued from Page 74)

ural gasoline stocks held at the close of November of 1,818,088 bbls. compared with 1,800,378 bbls. on the first day of the month.

The production of natural gasoline by fields for the month of November is given in tabular form as follows:

PRODUCTION BY FIELDS

	Gas treated (1,000 cu. ft.)	Natural gasoline produced (gallons)
Fullerton and Whittier	640,874	1,508,606
Midway	1,694,356	2,940,009
Huntington Beach	449,698	1,488,164
Kettleman Hills	10,673,389	13,587,956
Long Beach	4,494,662	9,606,026
Richfield	418,587	527,075
Santa Fe Springs	6,221,607	9,210,667
Seal Beach	575,294	969,505
Ventura Avenue	4,324,106	4,054,528
All other fields	4,915,424	7,304,944
Total	34,407,997	51,197,479

PRODUCTION BY METHODS

Type of plant:	Gas treated (M.C.F.)	Natural gasoline produced (gallons)	Gasoline recovery per M.C.F. gas treated
Oil absorption	34,247,236	51,018,043	1.490
Compressor	160,761	179,436	1.116
Total	34,407,997	51,197,479	1.488
Finished gasoline produced at plants			175 bbls.
Stocks—		Gallons	Bbls.
Natural gasoline held by plant operators		6,957,476	165,634
Natural gasoline held by refineries		69,402,228	1,652,434
Total		76,359,704	1,818,088

ROYAL DUTCH IN GERMANY

Royal Dutch has obtained a strong foothold in the German petroleum producing industry through two companies prominent in that country. Early in 1931 Bataafsche Petroleum Maatschappij (Royal Dutch) purchased control of Ostol G.m.b.H. of Hanover, previously controlled by North European Oil Corp., and controlling considerable acreage in the Hanover Field. Later Royal Dutch sponsored the formation of Teutonia Tiefbohr-Gesellschaft m.b.H. at Cologne. The German firms of Otto Wolff, of Cologne, and Alfred Wirth & Co., of Erkelen have minority holdings in the Teutonia company and are expected to conduct development work for Royal Dutch.

Bureau of Mines Statistics for November, 1931

SUPPLY AND DEMAND OF ALL OILS

(Including wax, coke and asphalt in thousands of barrels of 42 U. S. gallons)

	Nov., 1931	Oct., 1931	Nov., 1930	Jan.-Nov., 1931	Jan.-Nov., 1930
NEW SUPPLY:					
Domestic production:					
Crude petroleum	72,851	73,079	67,957	777,101	831,039
Daily average	2,428	2,357	2,265	2,327	2,488
Natural gasoline	3,405	3,345	4,317	39,490	48,360
Benzol	135	142	187	1,796	2,506
Total production	76,391	76,566	72,461	818,387	881,905
Daily average	2,546	2,470	2,415	2,450	2,640
Imports:					
Crude petroleum	3,604	4,106	4,467	42,935	57,402
Refined products	2,579	3,939	2,807	35,929	40,179
Total new supply, all oils	82,574	84,611	79,735	897,251	979,486
Daily average	2,752	2,729	2,658	2,686	2,933
Increase in stocks, all oils	2,762	*6,339	*2,504	*49,533	*17,623
DEMAND:					
Total demand	79,812	90,950	82,239	946,784	997,109
Daily average	2,660	2,934	2,741	2,835	2,985
Exports:					
Crude petroleum	2,449	3,389	1,765	24,475	22,366
Refined products	8,068	8,057	7,768	92,867	123,066
Domestic demand	69,295	80,504	72,706	829,442	851,677
Daily average	2,310	2,597	2,424	2,483	2,550
Excess of daily average domestic production over domestic demand	236	†127	†9	†33	98
STOCKS (end of month):					
Crude petroleum:					
East of California	327,138	326,106	373,296	327,138	373,296
California‡	135,941	135,894	143,725	135,941	143,725
Total crude	463,079	462,000	517,021	463,079	517,021
Natural gasoline	2,586	2,577	2,380	2,586	2,380
Refined products	153,273	151,599	152,473	153,273	152,473
GRAND TOTAL STOCKS, ALL OILS	618,938	616,176	671,874	618,938	671,874
Days' supply	233	210	245	218	225
Bunker oil (included above in domestic demand)	3,962	3,643	3,794	40,269	46,905

*Decrease. †Deficiency. ‡Includes residual fuel oils.

PRODUCTION OF CRUDE PETROLEUM BY STATES

(Thousands of barrels of 42 U. S. gallons)

	November, 1931 Total	November, 1931 Dy.av.	October, 1931 Total	October, 1931 Dy.av.	Jan.-Nov., 1931	Jan.-Nov., 1930*
Arkansas	1,041	35	1,093	36	13,872	18,159
California:						
Kettleman Hills	1,800	60	1,856	60	15,693	5,497
Long Beach	2,263	75	2,343	76	27,802	33,686
Santa Fe Springs	1,873	62	1,896	61	22,303	41,588
Rest of State	9,062	303	9,537	308	107,471	128,822
Total California	14,998	500	15,652	505	173,269	209,592
Colorado	115	4	143	5	1,424	1,518
Illinois	429	14	441	14	4,578	5,330
Indiana:						
Southwestern	64	2	67	2	734	873
Northeastern	3	....	3	....	35	50
Total Indiana	67	2	70	2	769	923
Kansas	3,063	102	3,122	101	33,702	38,439
Kentucky	602	20	592	19	5,886	6,848
Louisiana:						
Gulf Coast	932	31	994	32	8,648	7,791
Rest of State	845	28	902	29	11,436	13,351
Total Louisiana	1,777	59	1,896	61	20,084	21,142
Michigan	425	14	406	13	3,315	3,644
Montana	192	6	247	8	2,653	3,071
New Mexico	1,324	44	1,335	43	13,916	8,971
New York	291	10	324	10	3,093	3,385
Ohio:						
Central and eastern	322	10	355	12	3,868	4,766
Northwestern	78	3	96	3	1,016	1,216
Total Ohio	400	13	451	15	4,884	5,982
Oklahoma:						
Oklahoma City	5,359	179	3,631	117	42,061	31,994
Seminole	4,538	151	2,970	96	43,512	62,084
Rest of State	6,360	212	7,016	226	78,249	107,402
Total Oklahoma	16,257	542	13,617	439	163,822	201,480
Pennsylvania	1,072	36	1,201	39	10,686	11,891
Tennessee	1	0	0	0	5	19
Texas:						
Gulf Coast	3,592	120	3,633	117	44,636	56,410
East Texas	12,019	401	12,825	414	96,900	0
West Texas	6,021	201	6,145	198	72,986	101,113
Rest of State	7,665	255	8,373	270	88,828	111,976
Total Texas	29,297	977	30,976	999	303,400	269,495
West Virginia	352	12	415	13	4,090	4,689
Wyoming:						
Salt Creek	664	22	695	22	8,153	9,672
Rest of State	484	16	403	13	5,499	6,777
Total Wyoming	1,148	38	1,098	35	13,652	16,449
United States total	72,851	2,428	73,079	2,357	777,101	831,039

*Includes Alaska and Utah.

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM EAST OF CALIFORNIA

(Thousands of barrels of 42 U. S. gallons)

Domestic petroleum by fields of origin:	Nov., 1931 Total	Nov., 1931 Daily av.	Oct., 1931 Total	Oct., 1931 Daily av.	Jan.-Nov., 1931	Jan.-Nov., 1930
Appalachian:						
Pennsylvania grade	1,985	66	2,143	69	21,308	21,726
Other (inc. Ky.)	733	24	679	22	7,711	9,079
Lima.-N.E. Ind.-Mich.	525	18	546	18	4,296	4,270
Ill.-S.W. Ind.	464	15	589	19	5,711	6,354
Mid-Continent:						
N. La. and Ark.	2,848	95	2,093	67	29,887	33,088
W. Tex.-S.E. New Mex.	7,491	250	8,562	274	97,095	116,490
Other (Okla., Kans., N. Tex., etc.)	36,234	1,208	39,792	1,284	398,481	355,457
Gulf Coast:						
Grade A	1,573	52	1,241	40	21,552	30,172
Grade B	3,437	115	2,992	96	38,581	35,682
Rocky Mountain	1,657	55	1,491	48	20,291	21,255
California	0	0	0	0	5	202
Total demand	56,947	1,898	60,069	1,937	644,918	633,782
Exports	1,528	51	1,959	64	17,379	14,540
Domestic demand	55,419	1,847	58,080	1,873	627,539	619,242
Foreign petroleum	3,478	116	4,456	144	43,195	59,335
Total domestic demand east of California	58,897	1,963	62,536	2,017	670,734	678,577

COMPARATIVE ANALYSES

(Thousands of barrels of 42 U. S. gallons)

	November, 1931 Total	November, 1931 Daily av.	October, 1931 Total	October, 1931 Daily av.	Jan.-Nov., 1931	Jan.-Nov., 1930
CRUDE PETROLEUM:						
Runs to stills: Domestic	68,010	2,267	71,590	2,390	777,311	799,726
Foreign	3,357	112	4,085	132	43,590	56,140
Total	71,367	2,379	75,675	2,441	820,901	855,866
Imports	3,604	120	4,106	132	42,935	57,402
Exports	2,449	82	2,389	77	24,475	22,366
MOTOR FUEL: Production	36,137	1,205	38,582	1,245	401,837	406,256
Imports	586	20	1,181	38	12,828	15,963
Exports	3,743	125	3,461	112	43,141	61,188
Stocks*	38,696	...	36,356	...	38,696	38,705
Domes. dem'nd.	30,640	1,021	35,051	1,131	372,784	365,587
KEROSENE: Production	3,815	127	3,701	119	38,733	45,632
Imports	...	...	...	...	10	163
Exports	1,215	41	1,293	42	12,065	15,562
Stocks	5,618	...	5,924	...	5,618	7,379
Domestic demand.	2,906	97	3,042	98	27,942	31,950
GAS OIL AND DISTILLATE FUELS: Production	6,631	221	6,974	225	81,535	74,334
Stocks	20,469	...	20,887	...	20,469	18,444
RESIDUAL FUEL OILS: Prod.	20,495	683	21,735	701	238,827	268,460
Stocks†	38,696	...	36,356	...	38,696	38,705
GAS OIL AND FUEL OIL:						
Production	27,126	904	28,709	926	320,362	342,794
Imports	1,961	65	2,738	88	22,914	23,784
Exports	2,209	74	2,286	74	27,280	33,340
Stocks	45,434	...	44,883	...	45,434	40,427
LUBRICANTS: Production	2,164	72	2,267	73	24,655	31,692
Imports	3	...	1	...	28	24
Exports	647	22	740	24	7,533	9,319
Stocks	9,422	...	9,113	...	9,422	10,536
Dom. demand	1,211	40	1,639	53	18,699	20,130
WAX (thousands of pounds):						
Production	46,760	1,559	46,200	1,490	432,040	511,560
Imports	5,775	193	2,634	87	30,656	27,234
Exports	30,585	1,020	26,367	851	251,859	265,348
Stocks	183,938	...	189,167	...	183,938	237,027
Domestic demand	27,179	906	24,508	791	259,491	226,011
COKE (short tons):						
Production	168,000	5,600	159,200	5,135	1,854,000	1,773,900
Stocks	1,439,000	...	1,392,700	...	1,439,000	1,096,600
ASPHALT (short tons):						
Production	209,600	6,987	314,200	10,135	2,844,900	3,140,200
Stocks	299,200	...	299,100	...	299,200	294,700
ROAD OIL:						
Production	135	5	452	15	5,093	5,291
Stocks	378	...	349	...	378	229
MISCELLANEOUS:						
Production	2,664	89	1,217	39	13,174	7,083
Stocks	714	...	665	...	714	501

*Includes motor fuel blends held at natural gasoline plants and in gasoline pipe line systems. †East of California.

STOCKS OF CRUDE PETROLEUM

(Thousands of barrels of 42 U. S. gallons)

EAST OF CALIFORNIA:	Nov.30, 1931	Oct.31, 1931	Nov.30, 1930
At refineries by location:			
East Coast: Domestic	8,560	9,019	11,038
Foreign	2,666	2,551	3,111
Appalachian	1,942	2,076	2,595
Indiana, Illinois, Kentucky, Michigan, etc.	3,145	3,041	3,048
Oklahoma, Kansas and Missouri	5,155	5,049	5,078
Texas: Inland	1,776	1,721	1,414
Gulf Coast: Domestic	7,112	6,366	7,814
Foreign	340	260	305
Arkansas and inland Louisiana	554	604	805
Louisiana Gulf Coast: Domestic	2,878	3,652	5,834
Foreign	587	656	732
Rocky Mountain	1,851	1,680	1,679
Total	36,566	36,705	43,457
At refineries by origin:			
Pennsylvania Grade	1,817	1,883	2,292
Other Appalachian (including Kentucky)	706	732	921
Lima, northeast Indiana, Michigan	233	180	127
Illinois-southwest Indiana	98	128	121
North Louisiana and Arkansas	1,882	2,548	5,085
West Texas and southeast New Mexico	3,516	3,241	5,412
Oklahoma, Kansas, North Texas, etc.	17,617	17,314	16,266
Gulf Coast: Grade A	1,521	1,512	3,953
Grade B	3,905	4,020	3,449
Rocky Mountain	1,678	1,680	1,674
California	...	...	...
Foreign	3,593	3,467	4,152
Total	36,566	36,705	43,457
Pipe line and tank farm:			
Pennsylvania Grade	4,634	4,671	5,618
Other Appalachian (inc. Kentucky)	1,050	999	905
Lima-N.E. Indiana-Michigan	1,387	1,466	1,311
Illinois-S.W. Indiana	9,824	9,873	10,380
N. Louisiana and Arkansas	17,995	18,304	20,163
West Texas and S.E. New Mexico	36,460	36,956	45,945
Oklahoma, Kansas, N. Texas, etc.	176,571	174,172	195,577
Gulf Coast: Grade A	4,170	4,408	6,664
Grade B	8,998	9,143	11,892
Rocky Mountain	23,123	23,299	24,696
Total	284,223	283,301	323,151
Total refinery, pipe line and tank farm	320,788	319,906	366,608
Producers	6,350	6,200	6,688
Total crude east of California	327,138	326,106	373,296
CALIFORNIA: Light	40,471	40,328	40,472
Heavy (including fuel oil)	95,470	95,566	103,253
Total (including fuel oil in California)	463,079	462,000	517,021

Note—Stocks of heavy crude east of California—September, 24,239,000 bbls; October, 23,617,000 bbls.

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN THE UNITED STATES*

(Thousands of barrels of 42 U. S. gallons)

	Nov., 1931	Oct., 1931	Nov., 1930	Jan.-Nov., 1931	Jan.-Nov., 1930
Gasoline	1,106	669	1,179	12,592	17,197
Natural gasoline	281	146	144	1,675	1,487
Kerosene	0	0	18	194	198
Gas oil	94	98	520	1,613	2,799
Diesel oil			...		208
Fuel oil	0	0	5	2	35
Lubricants	5	0	12	74	128
Asphalt	1	0	2	14	19
Total	1,487	908	1,880	16,164	23,071

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

PRODUCTION OF CRUDE PETROLEUM BY FIELDS, WITH CLASSIFICATION BY GRAVITY

(Thousands of barrels of 42 U. S. gallons)

FIELD:	Nov., 1931 Total	Nov., 1931 Daily av.	Oct., 1931 Total	Oct., 1931 Daily av.	Jan.-Nov., 1931	Jan.-Nov., 1930*
Appalachian:						
Pennsylvania Grade	1,882	63	2,130	69	19,858	22,486
Other (inc. Ky.)	753	25	757	24	7,771	9,112
Lima-N.E. Ind.-Mich.	506	17	505	16	4,366	4,910
Ill.-S.W. Ind.	493	16	508	16	5,312	6,203
Mid-Continent:						
N. La. and Ark.	1,886	63	1,995	65	25,308	31,510
W. Tex.-S.E. New Mex.	7,297	243	7,432	240	86,407	109,504
Other (Okla., Kansas, N. Tex., etc.)	39,004	1,300	37,937	1,224	383,252	351,895
Gulf Coast:						
Grade A	1,345	45	1,428	46	16,828	27,704
Grade B	3,179	106	3,199	103	36,506	36,497
Rocky Mountain	1,503	50	1,536	49	18,224	21,625
California	14,998	500	15,652	505	173,269	209,593
Total	72,851	2,428	73,079	2,357	777,101	831,039

*Includes Alaska and Utah. Note—Production of heavy crude—September, 5,833,000 bbls.; October, 6,092,000 bbls.

NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	Nov., 1931	Oct., 1931	Nov., 1930	Jan.-Nov., 1931	Jan.-Nov., 1930
Oil	874	705	657	6,004	11,100
Gas	161	142	231	1,798	2,591
Dry	253	199	494	3,430	6,249
Total	1,288	1,046	1,382	11,232	19,940

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

RECORD OF WELLS FOR IMPORTANT FLUSH FIELDS, NOVEMBER, 1931*

	Completions Oil	Gas	Dry	Total initial production (bbls.)	Average initial production (bbls.)	Drilling Nov. 30
Texas	622	15	92	112,300	200	708
East Texas	553	...	17	69,000	100	303
Gulf Coast	23	...	13	22,000	1,000	81
West Texas	13	...	1	8,800	700	78
California	18	...	21	73,100	4,100	141
Kettleman Hills	4	...	...	66,300	16,600	11
Long Beach	...	...	...	...	...	16
Playa Del Rey	1	...	2	1,100	1,100	3
Oklahoma	26	9	19	32,300	1,200	230
Oklahoma County	9	...	1	31,300	3,500	47
Pottawatomie-Seminole Counties	...	...	...	...	...	4
New Mexico	3	...	3	2,800	900	52
Lea County (Hobbs)	1	...	2	2,700	2,700	6
Other States	205	134	117	30,900	200	1,020
Total United States	874	161	253	251,400	300	2,151

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM AND MAJOR REFINED PRODUCTS*

(Thousands of barrels of 42 U. S. gallons.)

	November, 1931 Total	November, 1931 Daily av.	October, 1931 Total	October, 1931 Daily av.	Jan.-Nov. 1931	Jan.-Nov. 1930
CRUDE PETROLEUM:						
Imports	3,694	120	4,106	132	42,935	57,402
From Mexico	994	33	860	28	7,855	9,421
From Venezuela	1,734	58	1,967	63	23,158	32,499
From Colombia	814	27	1,140	37	10,554	13,064
From other countries	62	2	139	4	1,368	2,418
Exports:						
Domestic crude oil	2,449	82	2,389	77	24,475	22,366
To Canada	1,810	61	1,898	61	18,478	17,835
To other countries	639	21	491	16	5,997	4,530
Shipments	...	...	...	...	...	1
REFINED PRODUCTS:						
Gasoline:						
Imports	586	20	1,181	38	12,828	15,963
Exports†	3,743	125	3,461	112	43,141	61,188
To United Kingdom	703	23	1,049	34	12,190	18,269
To France	840	28	261	8	6,049	8,721
To Canada	226	8	245	8	2,791	4,131
To other countries	1,954	65	1,820	59	20,739	28,836
Shipments	20	1	86	3	1,372	1,231
Kerosene:						
Exports	1,215	41	1,293	42	12,065	15,562
To China	72	2	164	5	1,681	2,326
To United Kingdom	357	13	328	11	2,695	2,690
To other countries	727	26	775	25	7,517	10,364
Shipments	9	...	26	1	172	182
Gas oil and fuel oil:						
Imports	1,961	65	2,738	88	22,914	23,784
Exports	2,209	74	2,286	74	27,280	33,340
To Japan	411	14	434	14	5,034	5,154
To Chile	169	6	428	14	2,781	4,004
To other countries	1,478	49	1,383	45	17,063	20,532
Shipments	151	5	41	1	2,402	3,650
Lubricants:						
Exports	647	22	740	24	7,533	9,319
To United Kingdom	171	6	240	8	1,669	1,919
To France	72	3	116	4	1,238	1,384
To other countries	398	13	379	12	4,551	5,935
Shipments	6	...	5	...	75	81
Wax (thousands of lbs.):						
Imports	5,775	193	2,684	87	30,656	27,234
Exports	30,585	1,020	26,367	851	251,859	265,348
To United Kingdom	8,552	285	6,846	221	60,665	72,044
To Italy	5,027	168	4,554	147	39,516	40,402
To other countries	16,997	567	14,965	483	151,643	152,866
Shipments	9	...	2	...	35	36

*From Bureau of Foreign and Domestic Commerce. †Includes benzol—78 bbls. in November.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, NOVEMBER, 1931

(Thousands of barrels of 42 U. S. gallons)

	Straightrun Total	Straightrun %	Cracked Total	Cracked %	Nat. gasoline Total	Nat. gasoline %	Grand total
East Coast	2,563	43	3,273	55	118	2	5,954
Appalachian	767	54	603	42	55	4	1,425
Ind., Ill., Ky., etc.	2,605	46	2,633	47	382	7	5,620
Okla., Kans., Mo.	2,673	55	1,698	35	481	10	4,852
Texas	4,426	48	3,942	43	832	9	9,220
Louisiana and Ark.	1,074	48	1,019	46	143	6	2,236
Rocky Mountain	417	44	433	45	103	11	953
California	3,284	60	1,403	25	845	15	5,532
Total	17,809	50	15,024	42	2,959	8	35,792
Texas Gulf Coast	2,880	44	3,138	48	501	8	6,519
Louisiana Gulf Coast	681	46	719	49	82	5	1,482

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 U. S. gallons)

	November, 1931	October, 1931	Jan.-Nov., 1931
Motor fuel turned into lines	1,847	1,887	12,747
Motor fuel delivered from lines	1,678	1,849	11,045
Stocks in lines and working tanks end of month	1,902	1,733	1,902

PRODUCTION OF MOTOR FUEL

(Thousands of barrels of 42 U. S. gallons)

	Nov., 1931 Total	Nov., 1931 Daily av.	Oct., 1931 Total	Oct., 1931 Daily av.	Jan.-Nov., 1931	Jan.-Nov., 1930
Straightrun gasoline	17,809	594	18,836	608	202,451	208,290
Cracked gasoline	15,024	501	16,043	1517	161,120	150,556
Natural gasoline:						
Blended at refineries	2,878	96	3,021	97	31,356	37,971
Blended at plants*	10	0	12	0	144	237
Run through pipe lines†	81	3	160	5	1,064	1,596
Jobbers, exports, etc.	200	7	398	13	3,900	5,100
Benzol produced‡	135	4	142	5	1,796	2,506
TOTAL MOTOR FUEL	36,137	1,205	38,582	1,245	401,837	406,256

*East of California. †To refineries in California. ‡Estimated.

RUNS TO STILLS AND OUTPUT OF REFINERIES, NOVEMBER, 1931

(Thousands of barrels of 42 U. S. gallons.)

INPUT—	Crude oil Domestic	Crude oil Foreign	Crude oil Total	Unfinished oils rerun	Natural gasoline	Total input
East Coast	10,100	3,187	13,287	1,119	118	14,524
Appalachian	2,951	.....	2,951	180	55	3,186
Ind., Ill., Ky., etc.	9,500	.....	9,500	136	382	10,018
Okla., Kans., Mo.	7,976	.....	7,976	344	481	8,801
Texas	17,468	41	17,509	1,524	832	19,865
Louisiana and Ark.	4,895	129	5,024	381	143	5,548
Rocky Mountain	1,385	.....	1,385	345	103	1,833
California	13,735	.....	13,735	997	*845	15,577
Total U. S.	68,010	3,357	71,367	5,026	2,959	79,352
Texas Gulf Coast	12,698	41	12,739	1,344	501	14,584
Louisiana Gulf Coast	3,331	129	3,460	33	82	3,575

OUTPUT—	Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oils	Total	Lubricants	Wax (thousands of pounds)
East Coast	5,954	655	1,077	4,334	5,411	656	21,000
Appalachian	1,425	283	245	227	472	384	7,560
Ind., Ill., Ky., etc.	5,620	325	914	1,333	2,247	165	3,920
Okla., Kans., Mo.	4,852	548	790	1,489	2,279	244	2,240
Texas	9,220	1,242	1,477	5,107	6,584	491	4,200
Louisiana and Ark.	2,236	445	494	1,535	2,029	81	5,040
Rocky Mountain	953	69	62	261	323	21	2,800
California	5,532	248	1,572	6,209	7,781	122	.....
Total U. S.	35,792	3,815	6,631	20,495	27,126	2,164	46,760
Texas Gulf Coast	6,519	987	1,220	3,517	4,737	478	3,920
La. Gulf Coast	1,482	392	342	917	1,259	64	5,040

OUTPUT (Continued)—	Coke (tons)	Asphalt (tons)	Road oil	Miscel. products†	Unfinished products	Shortage†
East Coast	12,300	97,400	12	617	260	285
Appalachian	3,700	6,300	.....	165	239	137
Ind., Ill., Ky., etc.	62,300	35,300	18	673	379	65
Okla., Kans., Mo.	30,400	900	43	264	46	357
Texas	40,600	12,200	6	623	799	611
Louisiana and Ark.	6,100	24,200	.....	96	289	190
Rocky Mountain	10,800	.....	21	73	242	65
California	1,800	33,300	35	153	1,255	259
Total U. S.	168,000	209,600	135	2,664	3,510	1,969
Texas Gulf Coast	28,800	12,200	6	556	745	328
Louisiana Gulf Coast	5,900	18,400	.....	67	70	92

*Includes 81,000 bbls. run through pipe lines. †Production of miscellaneous products east of California in November, 1931, includes still gas equivalent on a B.t.u. basis to 2,244,000 bbls. fuel oil. In previous reports this has been reported as fuel oil production and shortage.

PRODUCTION AND DISTRIBUTION OF NATURAL GASOLINE

(Thousands of barrels of 42 U. S. gallons)

	Nov., 1931 Total	Nov., 1931 Daily av.	Oct., 1931 Total	Oct., 1931 Daily av.	Jan.-Nov., 1931 Total	Jan.-Nov., 1931 Daily av.
Production	3,405	113	3,345	108	39,490	118
Decrease in all stocks	0	0	511	16	707	2
Total	3,405	113	3,856	124	40,197	120
Blended at refineries	2,878	96	3,021	97	31,356	94
Blended at plants E of Calif.	10	0	12	0	144	0
Run through P. L. in Calif.	81	3	160	5	1,064	2
Jobbers, exports, etc.	200	7	398	13	3,900	12
Increase in all stocks	9	0	0	0	0	0
Balance	227	7	285	9	3,733	11
Total	3,405	113	3,856	124	40,197	120

STOCKS HELD BY REFINING COMPANIES, NOVEMBER, 1931*

(Thousands of barrels of 42 U. S. gallons.)

	Gasoline	Kerosene	Gas oil and fuel oils: Gas oil and distillate fuels	Gas oil and fuel oils: Residual fuel oils	Gas oil and fuel oils: Total
East Coast	4,277	992	4,890	4,848	9,738
Appalachian	1,316	283	911	687	1,598
Ind., Ill., Ky., etc.	5,126	664	2,515	2,808	5,323
Okla., Kans., Mo.	3,243	645	2,758	2,920	5,678
Texas	7,124	951	3,859	9,799	13,658
Louisiana and Arkansas	1,176	289	709	3,397	4,106
Rocky Mountain	1,545	354	362	506	868
California	12,979	1,440	4,465	(†)	4,465
Total	36,786	5,618	20,469	24,965	45,434
Texas Gulf Coast	4,845	818	3,134	6,394	9,528
Louisiana Gulf Coast	986	272	522	2,811	3,333

	Lubricants	Wax (thous. of pounds) Crude scale	Wax (thous. of pounds) Refined	Wax (thous. of pounds) Total	Coke (tons)
East Coast	3,084	38,018	17,098	55,116	39,800
Appalachian	1,099	19,471	2,677	22,148	12,700
Ind., Ill., Ky., etc.	1,021	19,371	1,954	21,325	152,900
Okla., Kans., Mo.	674	2,954	2,287	5,241	159,400
Texas	2,140	882	14,230	15,112	720,900
Louisiana and Arkansas	136	33,739	1,161	34,900	118,500
Rocky Mountain	243	28,663	1,433	30,096	135,400
California	1,025	.....	.....	.....	99,400
Total	9,422	143,098	40,840	183,938	1,439,000
Texas Gulf Coast	2,061	882	14,147	15,029	596,200
Louisiana Gulf Coast	120	33,739	1,161	34,900	118,200

	Asphalt (tons)	Road oil	Miscel. products	Unfinished oils	Natural gasoline
East Coast	88,500	17	58	7,756	51
Appalachian	12,900	13	61	1,567	3
Ind., Ill., Ky., etc.	93,000	41	243	6,144	44
Oklahoma, Kans., Mo.	4,100	81	23	3,146	31
Texas	10,700	12	9	12,444	153
Louisiana and Arkansas	48,400	.....	13	2,158	10
Rocky Mountain	2,500	66	44	1,641	1
California	39,100	148	262	28,513	1,652
Total	299,200	378	714	43,369	1,945
Texas Gulf Coast	10,600	12	3	11,237	147
Louisiana Gulf Coast	29,500	.....	4	1,651	6

*Stocks east of California represent inventories held by refining companies at or near refineries; California stocks represent inventories held by refining companies on the Pacific Coast of the United States at refineries, at or in transit to water terminals and bulk distributing stations. †Included with heavy crude. ‡Includes 3,824,000 bbls. tops.

DRILLED IN 1882, KANSAS WELL STILL PRODUCING

(Continued from Page 15)

had not definitely entered the company. In the meantime he had done so, with the result that all eight shares in the company had been assigned, leaving none for Mr. McCartney, who declared he was not being dealt with fairly. Mr. Werner shared Mr. McCartney's view.

Get Out of Tight Hole

Rather than see the undertaking collapse Mr. Werner had his own share of stock transferred to Mr. McCartney. Further influencing him to this step was the realization that through no fault of his own he had been put in the position of breaking faith. Mr. McCartney now was satisfied, timid stockholders were persuaded to remain in the venture, all debts were paid by means of an assessment and once more the sun shone. The other members of the company voted Mr. Werner a share of nonassessable stock, but he received no remuneration for time and work which he had devoted to the enterprise.

Everything now was ready to begin actual drilling and Mr. Werner telegraphed to his father-in-law, Robert S. Cathers, an oil field worker in the East and skilled as a rig builder, to join him. In the meantime, he built a one-room shack near the tar spring and this served as a dwelling for him and Mrs. Werner and their four children from May till December, 1882.

Mr. Werner and Mr. Cathers cut rig timbers, planed them and built a 70-foot derrick. Then they installed the drilling outfit and began making hole. Mr. Werner was the driller and his father-in-law the tool dresser.

An 8-inch hole was drilled for the first 250 feet. Here 5⅝-inch casing was set. From this point the hole was made 5⅜-inch. On July 25, 1882, gas was struck at a depth of 305 feet in the top of a 30-foot brown sand. It showed a pressure of 87 pounds the first minute. After being confined for a time the pressure would rise to 100 pounds.

Precursor of Great Industry

The search for oil by Mr. Werner and his associates produced no oil, but it did give to Kansas the well which proved to be the precursor of the natural gas industry in that State.

At first no commercial use was made of the gas, which was allowed to blow off into the air through a high vertical pipe. It was kept lighted all the time, and the pillar of flame which could be seen from distant points in the district brought throngs of curious.

As no pressure regulating device was available, Mr. Werner decided not to attempt to utilize the gas in the Westfall home. A leaky casinghead used in closing in the well caused the first gas well fire in the State. John Arney, employed to do hauling, struck a match to light his pipe while on the derrick floor. There was instantly an explosion and a flash of flame. The astonished man was blown off his feet and his hair was singed, but he was not seriously hurt. Mr. Werner and Mr. Cathers extinguished the fire.

The company drilled two more wells on the Westfall farm. No. 2 had to be abandoned on account of salt water. No. 3 produced a small showing of oil, but no gas.

The plan of laying a 7-mile pipe line from the No. 1 well to Paola was abandoned as unlikely to be profitable. Late in the fall of 1882 the company changed its name to Paola Gas Co., moved the rig to a location provided by Mr. McLachlin near Paola and drilled to 500 feet, but found nothing but salt water. This chilled what little enthusiasm had remained among Mr. Werner's associates, but he himself was still determined.

Louisburg Looked Good

In the spring of 1883 Mr. Werner decided that the little town of Louisburg in Miami County "looked good for gas." He organized an unpretentious stock company, shares in which were sold at $25, obtained a well location inside the town, got the use of the drilling outfit which he had been using and drilled to 400 feet. At this depth he encountered a fair flow of gas, which was utilized at once to fire a boiler in a nearby wagon shop.

At this juncture a man named Towney was about to open a new three-story hotel which he had built. Mr. Werner obtained a short lease on it and installed fittings for the use of gas. This new departure made the hotel popular, the demand for rooms sometimes exceeding capacity to such an extent that guests slept three in a bed.

All this, as Mr. Werner had expected, revived interest in the natural gas possibilities of eastern Kansas. The Paola Gas Co. showed pronounced signs of returning life, but now, with the fresh importance which it had gained it became a center of stratagem, and control of the embryo organization soon passed into more adroit hands. Within a few weeks, in 1884, Mr. Werner found himself divested of all interest in the enterprise of which he previously had been the leading spirit, and from that time on he had no major part in developing the natural gas resources of the State. He continued to do contract drilling, and he was joined in 1886 by Peter Fertig, who had been an oil well driller in Pennsylvania. The wives of the two men were sisters. On the Elijah Russell farm, half a mile south of the No. 1 Westfall, Mr. Werner and Mr. Fertig drilled for the Paola Gas Co. in 1887 a well which had a promising show of oil. They then drilled a circle of tests around the Russell well in the hope of getting production, but nothing worth the cost of pumping was found.

New Figure Appears

Along with changes in the personnel of the Paola Gas Co. a new and enterprising figure gained ascendancy in the field. This was William M. Mills, who later was to have the distinction of drilling the Mid-Continent's discovery oil well. Mr. Mills, formerly an oil operator in the East, was left penniless on Black Friday, May 16, 1884, when fortunes were wiped out in the oil exchange collapse in Pennsylvania and he went to Kansas to start over again. With capital provided by friends he was about to start drilling for oil in the Cherryvale district when he heard about the discovery of gas on the Westfall farm. He abandoned his own plans and hurried to Miami County, where he began taking up leases.

Mr. Mills put down his first well on the Bundy farm, a mile east of the State Insane Asylum, near Osawatomie, and got a good gas producer. The gas was piped to the asylum, whose buildings required a large quantity of fuel. An entry in a diary kept by Mr. Mills says that "Carter Brothers of Eaton, Ind.," gave him financial help in putting down the first well. Before starting operations Mr. Mills had sent for William G. Bryson, then a drilling contractor in Ohio and now vice president of Black, Sivalls & Bryson, Bartlesville, Okla. For the next five years the two men worked together, Mr. Bryson as driller in the pay of the other man, and oftentimes Mr. Mills himself as tool dresser. Four more wells were put down, all, like the first, on the north bank of the Marais des Cygnes River, and all found gas. In the meantime, Mr. Mills had acquired control of the Paola Gas Co., which had a franchise to supply gas in Paola. He himself obtained a similar franchise in Osawatomie. Widening his drilling operations, he soon was providing natural gas for domestic use in Paola, Osawatomie and Spring Hill.

Financial Difficulties Mount

Financial difficulties beset Mr. Mills. Many of his wells were dry holes and the conditions under which gas was sold to the consumer made it hard to squeeze out a profit. No meters were used in that early day, with the result that gas was wasted in enormous volume. All service pipe and house connections were installed free. The entry, "boys connecting stoves," is found frequently in Mr. Mills' diary. Consumers paid a flat rate of $5 a month for a heater in winter and a lower rate for cook stoves in summer. Persons who did not get the gas service themselves often went to the home of a neighbor who did and there used the gas to boil clothes on wash day. Gas lights were left burning night and day. Churches were provided with light and heat free of cost. Mr. Mills kept two strings of drilling tools going constantly. One desperate year is recalled when Mr. Mills was under an expense of $3,000 a month without getting enough gas for a cook stove. Many persons refused to have gas installed because they were afraid of it.

Throughout this trying period Mrs. Mills worked side by side with her husband. During the preceding two years, while the latter was driving from one point to another in Kansas hunting for conditions indicative of oil deposits, Mrs. Mills always was in the horse-drawn buggy beside him, planning, suggesting, cheering, helping when opportunity offered. And now, when Mr. Mills had assumed the task of developing the young natural gas industry in eastern Kansas she labored tirelessly at whatever her hands and her busy brain could find to do. She kept the accounts. She cooked meals for the seven men employed in the work around the wells, laying pipe lines and installing fittings for new patrons. She even used to go to the workshop in the rear of her husband's office in Osawatomie and cut threads on lengths of pipe, thus saving time for the workmen. And with it all she took care of her home and her baby.

Watching the Pennies

Besides his diary in which he entered briefly each day's activities, Mr. Mills kept an account of every penny spent as he drove about the field or worked with his men. Here are a few items from the account book in 1886, indicating the punctilious character of the man, his watchfulness of outgo and his solicitude for his little horse, Dave.

April 12—Med'cine for horse	$0.25
April 13—Rosin for horse	.05
April 18—Fixing buggy	.10
June 15—Fixing buggy cushion	.50
July 4—New shoes for Dave	1.50
October 4—Medicine for Dave's eyes	.25

Hard work, foresight, abounding energy and obstinate refusal to admit defeat eventually brought a moderate measure of prosperity as their reward. Introduction of the meter stopped the wanton waste of gas by consumers. As more and more territory was proved up the percentage of dry holes dropped. Instead of being regarded as a somewhat dangerous luxury the fuel took its place as an indispensable commodity. In the course of time Mr. Mills' natural gas enterprises in the three small towns where he had franchises were bringing him a gross income of $60,000 annually. Then came financial trouble and, shortly after the close of the World War, a receivership. The Mills properties passed into the hands of their present owner, the Union Public Service Co. Mr. Mills continued to drill gas wells on his own private property, gaining in this way a comfortable income which still is received by Mrs. Mills.

Among the trees which surrounded his home in Osawatomie Mr. Mills installed gas lights such as were used in city streets. These old lamp posts of another day have been allowed to remain.

The Westfall farm, on which Mr. Werner drilled the historic discovery gas well of Kansas, is owned now by Reinhart Steffen and it is occupied by his son-in-law and daughter, Mr. and Mrs. Alfred Walters. Gas from the old well is used for heating, lighting and cooking in the dwelling and for heating several farm buildings.

HOLIDAYS SLOWED UP FIELD WORK AND COMPLETED WELLS IN DECEMBER

The Christmas holidays, as usual yearly, caused a falling off in completions in December, 181 fewer wells having been completed in that month than in November, in the fields east of California, but the average initial production showed no signs of diminishing. There were fewer operations started than in November, which is also usually the case, and at the close of the year 655 rigs up and 1,981 wells classified as drilling, a total of 2,636 operations, were reported in the fields east of California. Following is a summary of field work in December:

SUMMARY OF ALL FIELDS
Wells Completed

	Comp.	Prod.	Dry	Gas
Eastern	166	567	43	45
Central Ohio	47	312	12	24
Lima	11	342	1	3
Indiana	15	280	5	5
Michigan	15	2,950	6	1
Kentucky	49	1,460	11	8
Illinois	0	0	0	0
Kansas	28	10,120	5	3
Oklahoma	54	64,962	16	13
North Central Texas	65	1,461	34	4
E. Cent. and E. Tex.	465	*50,131	8	0
East Texas gas field	3	0	1	1
West Texas	14	3,068	6	0
Panhandle Texas	10	1,814	0	3
Gulf Coast	34	21,176	12	2
Southwest Texas	58	6,154	29	5
North Louisiana	16	120	8	6
Arkansas	3	50	2	0
Mississippi	6	0	1	5
Montana	3	200	2	0
Wyoming	3	700	1	0
Colorado	0	0	0	0
New Mexico	4	3,524	1	1
Total December	1,068	169,391	204	129
Total November	1,249	178,283	232	161
Difference	181	8,892	28	32

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Eastern	45	160	205
Central Ohio	23	83	106
Lima	3	17	20
Indiana	4	55	59
Michigan	66	88	154
Kentucky	7	65	72
Missouri	0	1	1
Tennessee	0	14	14
Illinois	1	20	21
Kansas	30	122	152
Oklahoma	60	247	307
North Central Texas	45	114	159
E. Central and E. Texas	240	297	537
East Texas gas field	4	33	37
West Texas	9	81	90
Panhandle Texas	11	41	52
Gulf Coast	6	86	92
Southwest Texas	21	91	112
North Louisiana	15	52	67
Arkansas	9	27	36
Mississippi	9	20	29
Alabama	2	3	5
Montana	16	56	72
Wyoming	11	67	78
Colorado	13	72	85
New Mexico	4	50	54
Utah	1	19	20
Total December	655	1,981	2,636
Total November	687	2,010	2,697
Difference	32	29	61

1931 PETROLEUM IMPORTS LOWER THAN EXPORTS

(Continued from Page 73)

$1.157.652 in November, 1931. Nearly all of this decline in volume of gasoline, naphtha and other light products was accounted for by the decrease in the amount coming from the Netherland West Indies, the decrease being from 1,052,764 bbls. in November, 1930, to 501,333 bbls. in November, 1931.

Increase in Gasoline Exports

At the same time there was an increase in exports of gasoline, naphtha and other light products from 3,546,845 bbls. valued at $12,380,012 in November, 1930, to 3,722,904 bbls. valued at $8,338,368 in November, 1931, the heavy decline in price for the latter shipments being indicated. In the 11-month period of 1930 gasoline exports totaled 58,970,387 bbls. valued at $236,919,254, dropping in quantity to 41,246,542 bbls. and declining in value to only $103,399,842 for the 11-month period of 1931.

There was a decreased shipment of gasoline in containers from 256,764 bbls. in November, 1930, to 159,916 bbls. in November, 1931. Bulk shipments of gasoline increased in the same months from 3,290,081 bbls. in 1930 to 3,562,988 bbls. in 1931.

Paraffin and paraffin wax imported in November, 1930, totaled 3,977,110 pounds valued at $192,335 compared with imports of 5,774,863 pounds valued at $195,211 in November, 1931. Paraffin wax exported in November, 1930, totaled 23,408,543 pounds, increasing to 30,676,254

pounds in November, 1931. This was a favorable showing in these wax exports as during the 11-month period ending November, 1930, exports totaled 265,312,056 pounds, declining to 251,825,225 pounds in the same period of 1931.

Unrefined Paraffin Exports

Unrefined paraffin exported in November, 1930, totaled 7,620,676 pounds, increasing to 11,912,143 pounds in November, 1931. Refined paraffin exported in November, 1930, totaled 15,787,867 pounds, increasing to 18,664,111 pounds in November, 1931.

Kerosene exports increased from 977,795 bbls. valued at $3,509,063 in November, 1930, to 1,205,685 bbls. valued at only $2,947,937 in November, 1931. In the 11-month period these exports decreased from 15,379,493 bbls. for 1930 to 11,893,913 bbls. in 1931.

Gas oil and fuel oil exported in November, 1930, totaled 1,862,368 bbls., increasing to 2,058,209 bbls. in the same month of 1931.

Fuel oil and bunker oil exported in vessels in foreign trade, not included in domestic exports, totaled 3,794,431 bbls. in November, 1930, decreasing to 3,062,745 bbls. in November, 1931, and in the latter month American vessels took of this fuel oil 1,431,024 bbls. and foreign vessels 1,631,721 bbls.

Lubricating oil exported in November, 1930, totaled 783,563 bbls. valued at $6,049,488 compared with 638,043 bbls. valued at $4,724,455 in November, 1931.

Lubricating grease exported decreased from 7,607,647 pounds in November, 1930, to 6,455,648 pounds in November, 1931.

SMALL ADVANCE IN GASOLINE QUOTATIONS

(Continued from Page 12)

better than average motor fuel from their refinery sources of supply.

This situation naturally has had some effect on open market quotations and no doubt will increase in importance as the year progresses. As more antiknock gasoline becomes available, market observers believe that the time will come when low octane material will become an "off brand" product with prices in line with its value. The effort now being made to have published prices reflect the difference in antiknock ratings of motor fuels is handicapped by the fact that there is no standard test of making the antiknock test which has received the final approval of government bureaus and testing organizations. This leaves the door open to unscrupulous buyers or sellers who claim antiknock properties for their gasolines which they do not have.

Other Products

The past method of quoting distillates has been dropped and this product divided into two distinct classes, tractor fuels and furnace oils. A large majority of refiners are now quoting tractor fuels as a separate product. The increasing demand for tractor fuels has been a factor in the decreased domestic consumption of kerosene. Formerly kerosene was used almost exclusively as a tractor fuel but refiners have found that they can offer a product which will give satisfactory performance and at the same time give the consumer the advantage of lower manufacturing cost.

The specifications for tractor fuels and furnace oils are similar and some refiners sell the same product to the two classes of consumers. In general, the tractor fuel is a more expensive product to refine and this situation is reflected in the prices asked by the sellers. In a well rounded skimming and cracking operation there is a trend toward refining a low flash furnace oil under 36 gravity with a 38 to 41 gravity furnace oil of light straw or prime white color. Endpoints in excess of 600° F. are not objectionable in furnace oils provided the flash is satisfactory but the better grades of tractor fuel are under 575 endpoint with several grades under 550.

Natural Gasoline

The changes in this week's published quotations on natural gasoline were made at the request of a group of representative sellers in the Mid-Continent Field. Over a year ago, the Natural Gasoline Association of America tentatively adopted specifications for 24 grades of natural gasoline. These grades cover the wildest product which it is possible to ship in tank cars to stabilized grades which could be used as motor fuel without blending with refinery grades.

These new grades which became finally effective January 1, 1932, are explained on page 74 of this issue. Briefly, the new specifications define gasoline based on vapor pressure and distillation range, these tests taking the place of the previous practice of determining the relative quality based on gravity recovery and endpoint. Some of the buyers who have been accustomed to purchase on the former basis believe that the new specifications will result in considerable confusion. The answer of the sellers to this contention is that the vapor pressure and distillation test provided for in the new specifications, when properly understood and correlated give the necessary information on gravity and recovery.

The one grade now being quoted is 26-70 which is similar in specifications to the former Grade AA which was the principal grade produced and the most actively traded on the spot market. By knowing the prevailing price, it is claimed by the sellers that fair prices can be determined for sales covering other grades. The suggested method is explained on page 74 of this issue.

Gasoline

Spot trading in gasolines the first few days of the new year did not improve as predicted by many the latter part of December. The 1 cent per 100 pounds increase in freight rates on gasolines and kerosenes which became effective January 5 on interstate shipments did not bring a rush for car numbers. Despite this continued dullness less distress gasoline is being offered and with a continuance of present posted prices for crude oil in the face of a decline of approximately 200,000 bbls. daily in crude oil for the entire industry over the past two weeks, it is felt that spot gasoline quotations will continue to improve.

The low of the U. S. Motor gasoline market on Tuesday was 2⅝ cents with a price of 2¾ cents for a 57-65 octane and 3⅛ cents for a minimum octane rating of 65.

The higher gravity gasolines were also slightly stronger in price, the 60-62, 400 grade being quoted at a low of 2⅞ cents, 390, 3¼ cents and domestic aviation at 3⅝ cents.

The 26-70 grade natural gasoline was quoted at 2 to 2¼ cents in Oklahoma on Monday and Tuesday with Texas prices one-fourth cent less. Two manufacturers who were not active in the spot market were quoting 2½ cents.

On a basis of 2 cents for 26-70 a grade approximating the former Grade A would sell for 2½ cents and Grade BB at 1¾ cents. Last week a spurt in buying absorbed the output of several manufacturers and they will not have additional material to offer before the end of the week.

Kerosene and Tractor Fuels

For the regular grades of kerosene the market is steady in Oklahoma at a low of 2⅜ cents for 41-43 and 2½ cents for 42-44. Unless there is a substantial curtailment in crude runs during January it is probable that additional export business will be needed to continue present quotations. There has been some increase in the kerosene output due to the better prices which are almost on a parity with low-priced gasolines.

The 38-40 light straw tractor fuel is in good demand at a low of 1⅞ cents with sales up to 2 cents. The 39-41 prime white grade is also moving satisfactorily at a low of 2 cents.

Furnace Oils

The low on 38-40 straw furnace oil was advanced from 1¾ to 1⅞ cents. There is little of this grade being offered on the spot market in Oklahoma and sellers are able to obtain the 1⅞-cent price. Other grades are unchanged.

Fuels and Gas Oils

The action shown by the regular grades of fuel oils and gas oils has been a disappointment to many of the sellers. Some refiners stored various grades of fuels and the industrial grades of gas oils believing that the demand and price would improve during the winter months. The demand so far has not come up to expectations although there are individual cases in which the stocks are being liquidated at higher prices than prevailed during summer and early fall months.

The price on industrial gas oil has been reduced to a low of 1¼ cents and the exceptionally high cold test gas oils are sold at a low of 1⅛ cents.

NEW REGULATIONS FOR STATION OPERATORS

(Continued from Page 79)

tion the directors are required to present an annual report of operations, general statement of the business of the preceding year, and a report of the financial condition of the corporation.

According to officials, the rights of licensees are amply protected in the purchasing of all supplies and petroleum products. Each licensee is at liberty to purchase his products from any source of supply, provided the required specifications are met.

"Properly organized," R. H. Downes, secretary and treasurer, said, "the Dixie plan has great merchandising possibilities, and affords a mutually beneficial and profitable association for responsible independent jobbers. Direct benefits are derived from sales value of a uniform brand name, good will obtained by widespread similarity of service, interchange of coupons, more and better advertising at less cost, and, in addition, a Dixie member retains his independent individuality and yet gains the prestige of a recognized and powerful association."

Officers elected for one year are: E. H. Riggs, Whiting-Riggs Oil Co., president; H. G. Cross, Waupun Oil Co., vice president, and R. H. Downes, Cook & Brown Lime Co., secretary and treasurer. Directors are: J. G. Stilwell, Triangle Oil Co.; E. H. Riggs, H. G. Cross, R. H. Downes; R. C. Streich, Streich Oil Co.; J. F. Hanson, Hanson Oil Co., and J. H. Spengler, Spengler Oil Co.

TANK WAGON CHANGES

(Continued from Page 78)

the gasoline station price to 14.7 cents in East St. Louis, Ill., November 14. On December 19 the gasoline station price was reduced to 13.1 cents in Saginaw, Mich., and the tank wagon price was reduced to 13.1 cents on December 24. On December 22 the station price was reduced to 15.2 cents in Grand Rapids, Mich., and the tank wagon price was reduced to the same amount on December 24.

Standard Oil Co. of Indiana advanced the gasoline tank wagon and all special naphtha prices .1 cent on January 6 throughout its territory except in the gasoline tank wagon and station prices in Chicago, Detroit and St. Louis.

TO DRILL IN ENGLAND

WASHINGTON, D. C., Jan. 4.—Drilling rigs will be needed in Sussex, England, during the coming few months. The N. M. D. Syndicate (Ltd.) of London has been granted a license to drill for petroleum in Sussex, the terms providing that within six months the company shall install necessary plant and machinery for drilling and producing petroleum, and that at least one well within the licensed area must be drilled to a depth of 1,500 feet within 18 months unless the Board of Trade approves a shallower well as being sufficient for the purpose of obtaining petroleum in satisfactory quantities.—C. E. K.

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 77)

ASSOCIATED OIL CO. PRICES

Associated Oil Co. prices effective June 20 are as follows:

Ventura Avenue, 32 gravity, 58 cents, with 2 cents added for each degree upward to and including 30 gravity, which is 74 cents.

Kettleman Hills, 30 gravity and above, 66 cents.

Potrero, 24 gravity, 69 cents, with 2 cents added for each degree upward to 34 gravity, which is 69 cents.

UNION OIL CO. OF CALIFORNIA

Crude Oil Prices for Its Purchases at the Well for Crude Produced in Strict Accordance With the Production Allocations Made by the California Statewide Curtailment Committee Effective 7 a.m., June 20, 1931

(All gravities above those quoted take highest price for that field)

Gravity °A.P.I.	Signal Hill	Alamitos Heights, Seal Beach	Huntington Beach	Athens, Rosecrans, Domingues	Torrance	Santa Fe Springs	Playa Del Rey*	El Coyote, Richfield	Montebello	Santa Paula	Orcutt	Coalinga	Lost Hills	McKittrick, Kern River, Sunset-Midway, Elk Hills, Buena Vista Hills	Gravity °A.P.I.
11-13.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$.50	11-13.9
14-14.9	.....	$.65	$.65	$.65	.....	$.65	.....	.....	$.65	$.65	$.65	$.55	$.55	.55	14-14.9
15-15.9	.....	.65	.65	.65	.....	.65	.....	.....	.65	.65	.65	.55	.55	.55	15-15.9
16-16.9	.....	.65	.65	.65	.....	.65	.....	.....	.65	.65	.65	.55	.55	.55	16-16.9
17-17.9	.....	.65	.65	.65	.....	.65	.....	.....	.65	.65	.65	.55	.55	.55	17-17.9
18-18.9	.....	.65	.65	.65	.....	.65	.....	.....	.65	.65	.65	.55	.55	.55	18-18.9
19-19.9	.....	.65	.65	.65	.....	.65	.....	$.65	.65	.65	.65	.55	.55	.55	19-19.9
20-20.9	.....	.65	.65	.65	.....	.65	.....	.65	.65	.65	.65	.56	.55	.55	20-20.9
21-21.9	.....	.65	.65	.65	.....	.65	.....	.66	.66	.65	.65	.57	.55	.55	21-21.9
22-22.9	.....	.65	.65	.65	.....	.66	.....	.67	.67	.65	.65	.59	.55	.59	.56	22-22.9
23-23.9	.....	.67	.67	.67	.....	.67	.....	.68	.68	.65	.65	.61	.55	.60	.58	23-23.9
24-24.9	.....	.69	.69	.69	$.69	.68	$.65	.69	.69	.65	.66	.63	.55	.63	.61	24-24.9
25-25.9	.....	.71	.71	.71	.71	.70	.65	.70	.70	.65	.68	.65	.57	.64	.64	25-25.9
26-26.9	.....	.73	.73	.73	.73	.....	.65	.....	.72	.....	.70	.67	.....	.66	.66	26-26.9
27-27.9	.....	.75	.75	.75	.75	.....	.68	.....	.74	.....	.72	.....	.....	.67	.68	27-27.9
28-28.9	.....	.77	.....	.....	.77	.....	.71	.....	.....	.....	.74	.....	.....	.69	.71	28-28.9
29-29.9	.....	.79	.....	.....	.79	.....	.73	.....	.....	.....	.76	.....	.....	.71	.74	29-29.9
30-30.9	.....	.81	.....	.....	.81	.....	.75	.....	.....	.....	.78	.....	.....	.72	.76	30-30.9
31-31.9	.....	.....	.....	.....	.83	.....	.78	.....	.....	.....	.....	.....	.....	.....	.....	31-31.9
32-32.9	.....	.....	.....	.....	.85	.....	.80	.....	.....	.....	.....	.....	.....	.....	.....	32-32.9
33-33.9	.....	.....	.....	.....	.87	.....	.83	.....	.....	.....	.....	.....	.....	.....	.....	33-33.9
34-34.9	.....	.....	.....	.....	.89	.....	.85	.....	.....	.....	.....	.....	.....	.....	.....	34-34.9

*Subject to a gathering charge of 5 cents per barrel.

RESULT OF A.P.I. POLL ON TARIFF RESOLUTION

With nearly 60 per cent of its membership refraining from casting a ballot, oil men composing the American Petroleum Institute have voted 1,047 to 433 in favor of endorsing in principle a tariff on the importation of crude oil and its refined products into the United States, it has been announced by W. R. Boyd, Jr., executive vice president.

Ballots were sent to the 3,673 members of the institute on November 20, following a vote by the board of directors at Chicago November 11. Of the directors, 20 approved a tariff in principle, 16 were opposed, 15 were present but not voting, and 21 were absent. It was then decided to canvass the membership by mail.

Only a few ballots have been received at institute headquarters in the past few weeks, and these came principally from foreign countries. Indications were that the 1,480 ballots received prior to December 31 would stand as the approximate total, representing 40.3 per cent of the membership. Five members returned ballots marked "not voting," and no replies were received from the others.

The resolution upon which both directors and members voted was as follows:

"Resolved, that the board of directors of the American Petroleum Institute endorse in principle a tariff on the importation into the United States of crude oil and the refined products and derivatives thereof."

The vote was the first ever to be taken of the institute membership.

H. C. FOLGER'S LETTER DEFINING MANAGEMENT

Of course, there is no sentiment in Big Business, writes H. A. in the Wall Street Journal. Only Herbert L. Pratt, head of the Standard Oil Co. of New York, doesn't know that. And here he is—uninformed—sending a formal letter to a brother Socony officer which reads:

Last week I was asked by Mrs. Henry C. Folger if I had some letter in Mr. Folger's autograph, which might be mounted and placed in the new Folger library at Washington. In looking through my files, I came across one which I am sending to you, as I am to each director, as it seems to me to state clearly what has been the fundamental method of management of Standard Oil Co. of New York ever since the dissolution in 1911.

It is an expression of our belief in the advisability of putting the responsibility of management in the several departments of the company instead of having the management centralized and governed by the home office at 26 Broadway.

Let us have Mr. Folger's letter constantly in mind as we go along, not only in our own business activities, but in all our Socony-Vacuum activities as well.

Sincerely yours,
H. L. PRATT.

Mr. Folger's letter to Mr. Pratt dates back to December, 1922, and . . . is it worth reading?

Dear H. L. P.:

Thank you for your beautiful letter from Cuba. I'm glad you like my management. But, really, it isn't management, at all. I simply see that everybody keeps busy and brings in profits. Each goes along in his own way without hindrance, so long as he gets results.

Some will think this freedom of individual initiative and management is allowed to go too far. But the results seem to justify it.

Years ago, when I went into another board, I was surprised to find that the initiative in all departments was controlled by three men, and that nothing could be considered that did not have the approach of one man. It seemed to me the business suffered greatly in consequence. So, when I had the opportunity, I determined to try the opposite plan. It seems to me to be better. We certainly have happier workers.

Sincerely yours,
H. C. FOLGER.

Shameless human! Happy over "happier workers."

A. A. P. G. ISSUES BOOKS

The American Association of Petroleum Geologists, Tulsa, recently published in book form "Stratigraphy of Plains of Southern Alberta" and "Symposium on Geophysics" which are reprints of several papers originally printed in the A.A.P.G. Bulletin.

There is a popular demand for information about geophysics and to satisfy this need the American Association of Petroleum Geologists selected eight articles on geophysics that have been printed in its bulletin during the past year. While these articles are to some extent technical they have been prepared so that the layman can read them understandingly and they should be of much value to those who really wish to know more about this important branch of petroleum industry science.

The book on southern Alberta is the Donaldson Bogart Dowling Memorial Symposium and contains 14 articles from the Alberta Society of Petroleum Geologists and is a reliable reference for information of the area covered.

Distribution of these books will be through the American Association of Petroleum Geologists, Tulsa Building, Tulsa.

AUSTRIA HAS SIX REFINERIES

Dumping of Rumanian refined products in nearby countries has retarded development of the refining industry in Austria, according to reports from Vienna. There are only six oil refineries in Austria, of which four have equipment for the production of a complete line of products.

Vacuum Oil Co. has a plant at Kagran, near Vienna, and the Fanto-Gallia Combine operates a refinery at Vosendorf, also near Vienna. The other two large plants in Austria are those of the Shell-Floridsdorfer Mineralol-Vertriebs G. m.b.H., and the Korneuburger Mineralol Raffinerie A.-G.

Government sanction is required for the construction of oil refineries in Austria, and the government does not favor additional plants as considerable of its revenue is derived from duties on imports of refined products, largely from Rumania. Crude oil is admitted to Austria duty-free, and Austrian refineries are supplied largely with Rumanian crude.

RUMANIA LICENSES EXPORTS

The Association of Petroleum Producers Without Refineries, a group of independent Rumanian producers, has been licensed by the Rumanian minister of industry and commerce to export 220,000 tons of Rumanian crude oil annually for a period of three years. The permit is the first to be issued by the government under a new plan for bringing under closer control export shipments of crude produced in Rumanian fields.

TEXAS OUSTER SUIT ON TRIAL AT AUSTIN

(Continued from Page 13)

service on the Standard Oil Co. of California, and on questions of sufficiency of service on the Standard Oil Co. of New York, the Standard of New Jersey and Shell-Union Petroleum Co., defense attorneys began arguments in Attorney General James V. Allred's ouster suit Tuesday afternoon, insisting that the case either be dismissed as against those corporations, or continued to another term to get service.

Attorney General James V. Allred urged Judge C. A. Wheeler hear arguments on the validity of the Texas anti-trust law as the matter of supreme importance and first determination.

Mr. Allred said writs for service were in the hands of the sheriff of San Francisco a month ago, but no return has been made.

Judge Wheeler invited the lawyers to argue the constitutionality question first, with the understanding that doing so would not bring any firm into court that had not entered an appearance but this was rejected by Attorneys Frank Andrews, Houston; R. L. Batts, Austin; J. A. Williams, Galveston, and others.

CHAMPLIN SUIT MUST WAIT FOR ITS TURN

WASHINGTON, D. C., Jan. 4.—The supreme court today refused to advance the hearing of the suit brought by the Champlin Refining Co. challenging the validity of the Oklahoma oil curtailment act.

Governor Murray of Oklahoma used the state militia to regulate oil production under the state conservation laws and the refining company, contending its constitutional rights were being violated, took the case to the supreme court.

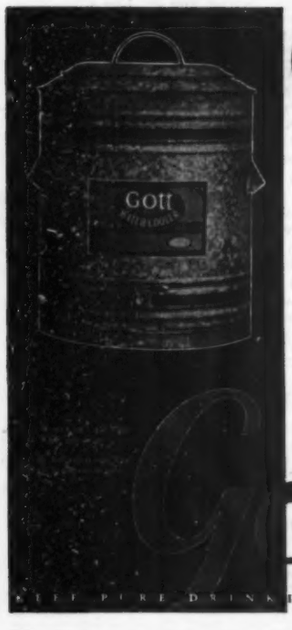
In its report to have the case advanced for hearing, counsel for the refining company contended the importance of the suit made the earliest possible decision imperative, but the court did not take that view. The case will await its regular turn for further action.

WORLD'S MOST TAXED PRODUCT

Petrol is now probably the article, taken the world over, which pays more taxes than any other, says the London Petroleum Times. A few years ago it was the exception and not the rule to find motor fuel taxed, save for the usual protective customs duty in nonproducing but refining countries. Now every one of the 48 United States has a tax on petrol; and these 48 separate imposts show a tendency to increase. Curiously enough, the United States, the most highly protected country in the world, has no import tax on petrol. Our own heavy tax of 8d. is, of course, the outcome of two factors, the desire for revenue and the existence of a commodity that could conveniently supply it. In France the price of petrol is mostly taxes, as its wholesale price is here. Ireland has followed our lead, but that country has doubled the tax from 4d. to 8d. without the sixpenny half-way house. Now Holland, which stood out against a petrol tax for a longer time than almost any other state, has fallen. The total revenue from petrol to the various governments of the world must far transcend that from any other commodity.

TO DRILL BIBI-EIBAT BAY

The Soviet oil trust is planning to drill in Bibi-Eibat Bay, adjoining the Bibi-Eibat oil field, with the use of special concrete caissons which will be lowered to the bottom of the pay at depth of 15 to 20 feet. The caissons will not only serve as foundations for the derricks, but will likewise be used for the storage of crude. Previous to the development of the plan for sinking these caissons, the oil trust had undertaken the filling in of part of the bay to permit of drilling operations.



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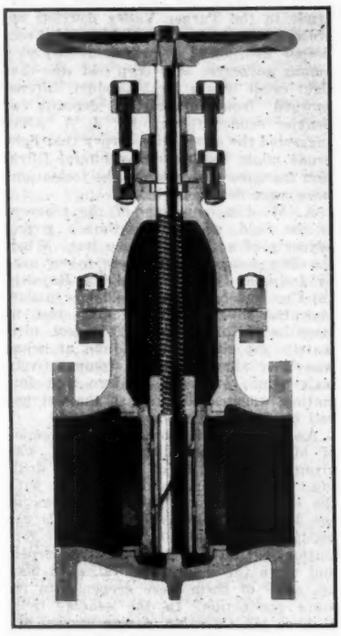

Sectional View Figure 873, Jenkins Standard Iron Body Double Disc Parallel Seat Gate Valve, flanged. Inside screw, stationary spindle. For 200 pounds oil, water, gas working pressure. Tested at 400 pounds.

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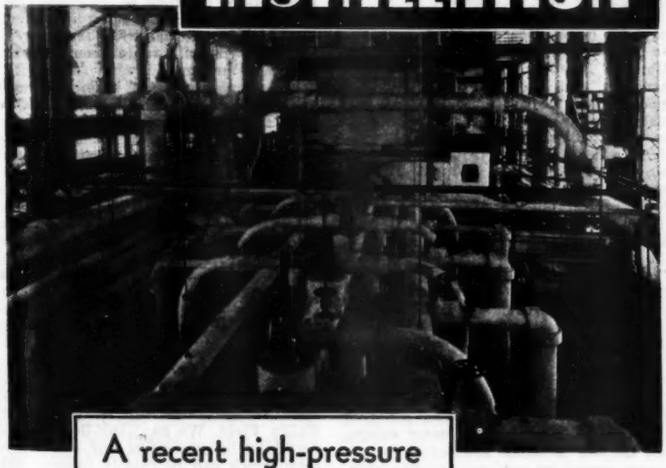

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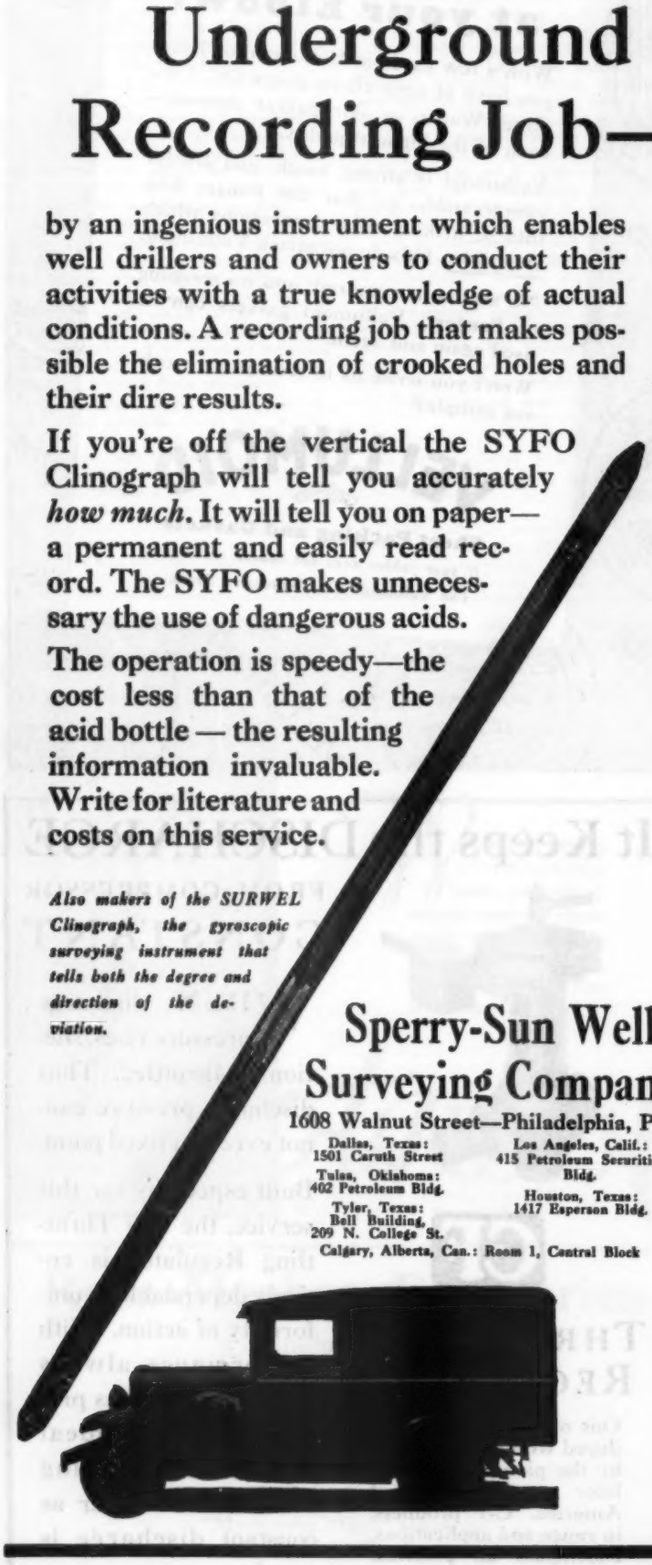

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PROSPECTS IN CANADIAN FIELDS FROM COLUMBIA TO QUEBEC

By Victor Lauriston

CHATHAM, Ontario, Dec. 31. — For years following the first strikes of light crude in the Turner Valley district, operators talked of what might result from deeper drilling. The prevalent theory among advocates of a deep test was that light crude was a freak product, filtered upward from underlying deposits of heavier crude; though Dr. J. A. Allan suggested the alternative theory that light crude might be derived by lateral filtration from reservoirs where the formations were more deeply buried.

A. W. Dingman, one of the pioneers of the field, was at the time a strong advocate of a thorough deep test. When the Dingman interests were taken over by Imperial Oil, Ltd., and the Royalite Oil Co. was organized, the latter undertook the much discussed deep test in Royalite's No. 4 well. This test ultimately got the Madison lime at what was later shown to be a comparatively high point; and, drilling into that formation, unexpectedly tapped the wet gas and crude naphtha horizon.

As long as this horizon gave promise of big production, little thought was given to the matter of still deeper drilling, the operators being satisfied with the opening of new producing areas in the Madison. The earlier deep wells got production around 200 feet in that formation, but later some tests went deeper, and when the older wells failed to hold up, some of them were deepened to restore production. In the central field, McLeod Oil Co.'s No. 4 was carried approximately 1,400 feet into the lime and got what was definitely a lower producing horizon in that formation. The production was, however, still wet gas and crude naphtha.

The depths at which the lime contact was reached varied greatly in different parts of the field, indicating exceedingly sharp folding of the lime. Royalite's No. 4, which got production around 3,740 feet, was comparatively high; and some wells went as deep as 6,000 feet for production, while one went 6,600 feet without reaching the lime at all. In the far south, one test appears to have drilled through the lime into shale.

Up to the time of the Turner Valley naphtha discoveries, Canadian operators do not appear to have regarded the Madison lime as a potential producing horizon; and the possibility is again mooted that the production in this formation is really a filtration of volatile products from the underlying Devonian lime, which in other fields is a recognized reservoir of gas and oil. Drilling on the Moose Dome structure in the foothills and on the Milk River structure in southern Alberta has shown that in these areas the Denvonian underlies the Madison, and is quite thick. The Turner Valley drilling has been sufficiently widespread to indicate the structural highs where it might be possible, by deepening existing wells, to reach the Devonian at a depth attainable by the drill.

Probable Life of Field

A report on the probable life of the Turner Valley Field has been prepared by Frank P. Fisher, government expert, and R. Van A. Mills, member of the advisory committee on gas conservation. The report is in part as follows:

"Having been requested to review, jointly, the information bearing upon the probable life of the Turner Valley Field under different limitations that may be placed upon the rate of gas production, these limitations ranging from 100,000,000 feet per day to 200,000,000 feet per day, we make the following statement:

"The primary factors sought in the problem are duration and amount of naphtha production, duration and amount of gas production, net return and the time within which net return may be realized, under the different limitations. It will at once be seen that the problem is exceedingly complex. The uncertainties that are inherent in such a problem can be eliminated only by accurate technical checks of operating data as they develop under whatever plan of operation is adopted. At this time we have no choice but to use the information that is now available and this we have endeavored to do to the best of our ability.

"To work out in detail all the phases of the problem in the short time available for our review would be impossible. We have reviewed the nature of all computations made by the technical committee and have mutually agreed to their adequacy. For present purposes we will deal with the problem along broad lines.

"Let us consider the opinions of three widely recognized engineers given in their sworn testimony before the public utilities board last May. We refer to the estimates of Ralph E. Davis of Pittsburgh, Pa., H. R. Davis of Buffalo, N. Y., and Stanley J. Davies of Calgary. Without considering all the details of their testimony we will quote their estimates of the gas reserves in the Turner Valley Field as of April 1, 1931. These figures are respectively 239,000,000,000 feet, 366,000,000,000 feet and 566,000,000,000 feet. Since April 1, approximately 50,000,000,000 feet have been produced. Consequently the above estimates should be reduced to 189,000,000,000 feet, 316,000,000,000 feet and 516,000,000,000 feet, respectively.

Five to Fourteen Years

"At the rate of flow of 100,000,000 feet per day, it is evident that even allowing the maximum estimate quoted above would provide a gas flow for only 14 years. Using the smallest of the above estimates and the 100,000,000 feet limitation the life of the field would be slightly over five years. The life of the field may reasonably be expected to lie between these two extremes.

"Mr. Fisher's analysis of the pressure tests taken by the provincial government in August of this year, indicates that the remaining reserves will not be found to exceed the maximum quoted above.

"No matter where the life of the field may fall between these extremes, two things are apparent. First, any increase in the permitted rate of flow will shorten the life of the field. Second, the maximum life of the field as indicated by all available data is so short under the 100,000,000-foot limitation that any increase in the allowance would be economically unsound.

"In explanation of this statement and, considering the field as a whole, we offer the following:

"1. The only chance for any reasonable measure of extinguishment of present investments in the field is the continuation of an adequate rate of return through an adequate period of time.

"2. At no rate of flow will the ultimate return from naphtha production be sufficient to extinguish the investments. We are forced to seek another source of revenue and this must come through the sale of gas. The necessary revenue from this source can come only through conserving the supply and marketing it profitably.

"We were requested to review the effects of different limitations of gas flow upon the probable life of the Turner Valley Field. We have fulfilled this undertaking by presenting our result in a form which can be readily followed and which can be further developed by simple arithmetic."

Fort Norman Field

With the opening of the new mining area at Great Bear Lake, in the North West Territories, where extensive development is assured for next year, it seems increasingly probable that production may be resumed in the Fort Norman oil field, which has been inactive for about eight years. Fort Norman, situated at the junction of Great Bear River and the Mackenzie, is the gateway for the new mineral development, and petroleum products refined in the field could be conveniently handled from this point.

Development work in the Fort Norman Field began when Imperial Oil, Ltd., sent a drilling outfit and crew into the field

in the summer of 1919. The discovery well was located 53 miles north of Fort Norman, on the east bank of the Mackenzie. A relief drilling crew and geologists were sent in during the summer of 1920, and late that fall the test was finished at 783 feet, with between 60 and 70 bbls. a day, oil being struck at several horizons.

In the boom which followed, extensive acreage was staked. In the winter of 1920-21 a number of parties "mushed" overland 1,400 miles or more to stake claims. In 1921 Imperial Oil, Ltd., extended its operations. In all, five wells were drilled by this company, and a sixth by Fort Norman Oil Co. and Mackenzie River Oil Co. jointly. The Fort Norman Oil Co. test was drilled by Frank H. Stover in the summer of 1921. It was located about 8 miles south of Imperial's No. 1 and drilled to 1,510 feet. Some gas was struck but no further drilling was done.

Imperial's No. 1 discovery showed declining production, and in 1922 was deepened to 975 feet which restored production. Another test at Bluefish Creek, 8 miles north of Fort Norman, on the east bank, was discontinued at 500 feet. A test was drilled on Bear Island in the Mackenzie River, about 2 miles from No. 1, being carried to 2,304 feet. At "C" camp, a short distance upstream from the Bear Island camp but on the west bank of the river, two wells were drilled, one being abandoned at 1,705 feet and the other carried to 3,075 feet before quitting. Before discontinuing work in 1924, a sixth well was drilled close to No. 1. This was the only other test to get commercial production, the depth being approximately the same as in No. 1. The drilling indicated that a small commercial production of medium-grade crude oil could be secured in a limited area, but though the other tests delimited the field in certain directions, the results secured can hardly be considered conclusive.

According to Dr. G. S. Hume, the outcrops indicate that rocks in this area range from the Cambrian to the Eocene, and that the potential oil area is greater on the west bank of the river than on the east. Imperial's No. 1 discovery is the flank of the major anticline which forms the Norman range, the top formation of the range being Silurian. No. 1 is situated on the outcrop of the Bosworth formation of the Upper Devonian lime, and production comes from the Fort Creek horizon which is between 50 and 75 feet thick. The Bosworth formation, with alternating sandstones and shales, provides a favorable oil reservoir and is responsible for most of the seepages on the east bank of the Mackenzie. The Fort Creek shales are underlain by a 10-foot section of the top of the Beavertail limestone, which is suitable for an oil reservoir. Hard bituminous limestones below this are unsuitable, but below this are porous limestones which might contain oil. The crude is around 30 gravity, and potential production from the two wells is between 120 and 175 bbls.

Will Test New Field

Announcement is made that British interests represented by Campbell M. Hunter, geologist, of London, England, are planning an important development in a new foothills area. The Hunter Valley Oil Co. has been formed and has secured options and leases on 27,188 acres on the Big Red Deer River, some 65 miles northwest of Calgary. The acreage is almost due west of Olds, the holdings being chiefly in Township 31, Ranges 9 and 10w5, with some additional acreage north, east and south of this block.

The Big Red Deer River runs through the acreage, and outcroppings indicate what is claimed to be a perfect potential oil structure. The river bed is in the Alberta shales which form a dome, overlain by the Cardium sandstone series. The main or Katherine anticline is just east of the forest reserve boundary at the junction of the Panther and Red Deer Rivers, leases on this structure extending 8 miles and aggregating 24 square miles. Other holdings lie east of this anticline. Hunter Valley Oil Co. is incorporated under Dominion charter. Officers are: President, Campbell M. Hunter; vice president, Robert J. McLaren; director, T. W. McDowell; secretary, G. Sheane, Calgary; assistant secretary, W. M. Baird, London. A 20-mile road will be built from the end of the government road to the Katherine anticline for the moving in of equipment and supplies, and actual drilling may not commence till next spring.

The company's geological investigations indicate that the Madison limestone, which is productive in Turner Valley, should be encountered on the Katherine anticline within 4,500 feet of the crest; while a potential oil horizon in the Benton may be got at 1,500 feet.

Okotoks Prospect

In the Okotoks district, east of the Turner Valley Field, some shallow drilling for mineral has been carried on by A. J. A. Bell. Tests showed a hard, lava-like formation with some mineral quite near the surface and drilling has gone so far as to indicate good structural conditions. A limestone was met in one test at the shallow depth of 17 feet, followed by sandstone, and at 60 feet some gas was encountered. Mr. Bell claims the area is a good crude oil prospect and has been endeavoring to arrange for a commercial test.

British Columbia Operations

In the Fraser Valley, British Columbia, British Columbia-Alberta Oils' No. 1, near Abbotsford, was taken over recently and deepened by Lancashire Oils, Ltd., with J. T. Wilson as president and managing director. The test was carried to 866 feet, where gas was struck in what is reported to be fair commercial quantities. The well is being cleaned out and finished at this depth, and location has been made for Lancashire's No. 2 in the Strawberry Hills area between the Sumas Field, where No. 1 is located, and New Westminster.

Lancashire Oils, Ltd., holds some 4,000 acres in the Sumas Field and 3,200 acres in the Strawberry Hills area. In the area around Abbotsford, gas is encountered in three main horizons, a first small show at 148 feet and the next gas horizon at 520 feet, with the main gas production at 866 feet. It is planned to market the gas to Abbotsford, a town of 1,500 population, and to a brick plant at Kilburn. Some residents of Abbotsford have for years been using gas from shallow wells, drilled in the vicinity. If a large commercial production is developed, the gas can be piped to New Westminster or to Vancouver, the latter being within about 40 miles of the field.

Considerable interest is being shown in development work at various points in the Fraser Valley. Altamont Oil Co. some time ago located a test in the Steveston area, and is reported getting ready to drill either there or in the Sumas district. British Columbia-Alberta Oils, Ltd., whose No. 1 test has just been finished by Lancashire Oils, Ltd., is reported preparing to drill a test of its own in the Sumas area.

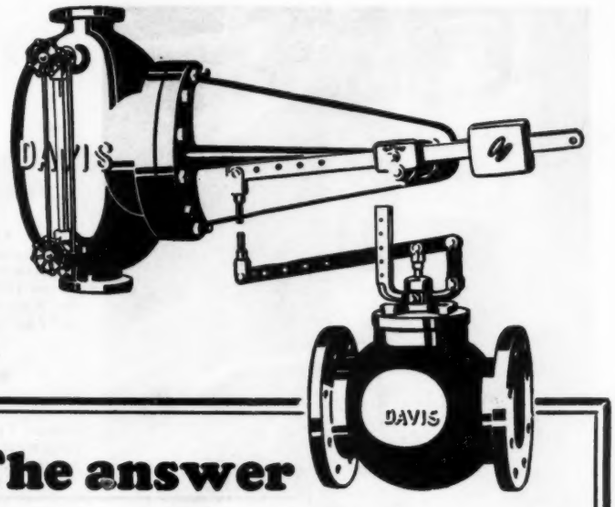
In the Lulu Island district, near Steveston, International Pipe Lines, Ltd., a Vancouver company financed largely by California interests, is reported to have successfully overcome sanding in its No. 4 well, which has a fair commercial gas production at 725 feet. The company is reparing to drill a series of shallow tests, with a view to developing sufficient aggregate production to justify a pipe line, possibly to Vancouver.

In the Kelowna district, British Columbia, Okanagan Oil & Gas Co.'s No. 1, Section 2-26-Osoyoos, is reported drilling around 1,826 feet with shows of natural gas. Commercial production of oil or gas is looked for by the operators inside 2,500 feet of drilling.

On the Australian ranch near Quesnel, Patrick Syndicate's No. 1 is at 1,400 feet and running casing preparatory to drilling into a potential oil sand.

In the Abbotsford district, British Columbia-Alberta Oils has leased 5,000 acres and is preparing for development. Two standard rigs are being secured and contract is reported let for No. 1 derrick. A gas horizon is indicated around 750 feet.

Near Aldergrove, in the Fraser Valley, Fraser Valley Oil Wells, Ltd., which some years ago took over the old Empire well, is reported arranging to resume



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Left: An Armstrong trap draining a small separator on the lines of the Louisiana Gas and Fuel Co.

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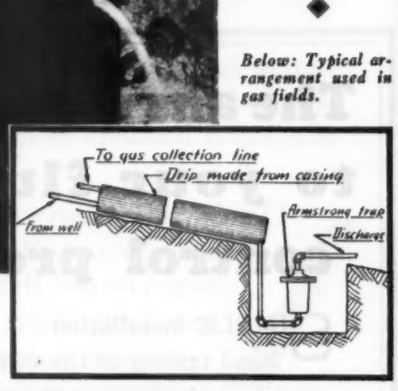
Below: Typical arrangement used in gas fields.



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drilling. Five miles south of Abbotsford, the Ives Syndicate's No. 1 is reported drilling around 600 feet with small shows of oil and gas. Six miles east of Abbotsford, Sumas Oil & Gas Co. is reported preparing to resume work. Several inconclusive tests have been drilled on the Sumas acreage.

Near Ferndale, Washington, the Lang well, just south of the British Columbia boundary, is reported drilling below 1,100 feet. Results of this test will throw considerable light on prospects on the British Columbia side.

Quebec Oil Prospects

In connection with oil and gas prospects in Quebec, a summary of the situation recently issued by the provincial department of mines is in part as follows:

"The staking of land as oil and gas claims, which started in the fall of 1929, continued actively throughout 1930, in the counties south of the St. Lawrence River. This part of the province is designated as the St. Lawrence Lowland. It occupies a roughly triagular area, the apices of which are respectively Quebec City, Ottawa and the foot of Lake Champlain.

"The St. Lawrence Lowland is almost wholly underlain by strata of Ordovician age, lying more or less horizontally, and comparatively undisturbed. In other regions, Ordovician rocks have yielded oil in commercial quantities, and it is the consideration of these two factors, viz., the undisturbed state of the rocks and the fact that such rocks are petroliferous in some parts of the United States, that has caused several companies interested in oil and natural gas to take up land with the intention of putting down several deep wells to test the Trenton in this region. In years past, several wells have been bored, but nowhere have they reached the Trenton limestone, which is lying under a much greater thickness of Queenston and Lorraine shales than was anticipated. The operators who have recently taken up boring licenses are making provisions to go down to 6,000 feet.

"The companies interested in this region, and who have secured tracts of land with the intention of testing them for oil, are: The Hope Engineering Co. in the counties of St. Hyacinthe, Nicolet and Lotbiniere; Mexican Seaboard Oil Co., in St. Hyacinthe, Richelieu and Yamaska; Alberta Gas & Fuel Co., in St. Hyacinthe, Richelieu, Bagot, Yamaska and Nicolet; South Shore Oil Lands, Ltd., in Yamaska and Nicolet; St. Hyacinthe Gas Co., in Vercheres and Richelieu; and Louis Brochu, in Yamaska and Nicolet. The lands held under temporary titles by these various interests comprise several thousand square miles.

"In the spring of 1931 the Hope Engineering Co. had begun operations by erecting a steel derrick near St. Denis de Richelieu, in St. Hyacinthe County, with equipment sufficient to bore down to a depth of 6,000 feet. It is expected that these undertakings will definitely determine the presence or absence of oil pools in this region."

A detailed report on natural gas in the St. Lawrence Valley has been compiled by Dr. W. A. Parks for the Quebec Mines Department, and is now being prepared for publication.

Quebec Oil Operators

While so far the recent drilling in Quebec has been limited to the deep test by Hope Engineering Co. at St. Denis and some structure testing by other interests, more or less definite plans have been made by a number of companies for drilling operations. Business conditions have, of course, affected operations to some extent, but it seems likely that a number of the projected tests will reach the actual drilling stage.

Alberta Gas & Fuel Co. of New York, a Henry L. Doherty subsidiary which has in recent years been active in Alberta, will probably drill near St. Pie de Guir. Atlas Gas & Oil Co. of Toronto has its chief acreage near Grondines. Bordeaux Coal & Oil Co., Richelieu Gas Co. and South Shore Oil Lands, Ltd., are all Montreal concerns. Cote Gas & Oil Co. of Drummondville, Quebec, headed by J. W. St. Onge, may drill in Aston Township. De Sales Oil Syndicate, a Montreal concern, holds acreage near that city. Hope Engineering Co. of Mount Vernon, Ohio, is drilling in Richelieu but is also largely interested in St. Hyacinthe County. Lanoraie Oil & Gas Syndicate of Ottawa has been doing structure testing near St. Joseph de Lanoraie. Mexican Seaboard Oil Co. of New York is chiefly active near St. Pie de Guir. Provincial Gas & Oil Co. of Quebec is interested in acreage near St. Gregoire, St. Jean Deschaillons and St. Pierre les Becquets. St. Hyacinthe Gas Co. is chiefly active around St. Hyacinthe, and St. Paul Oil & Gas Corp. of Montreal is planning to drill near St. Henri de Mascouche. Twin Cities Gas & Oil Co. of Montreal is interested in St. Gregoire, Lanoraie and Deschambault holdings.

Outside the St. Lawrence Valley proper are Le Syndicat de Mines at de Petrole du Lac St. Jean of Roberval, Quebec, which holds oil and mineral acreage in Metabechouan Township. The Gaspesian Oil Co. of Riviere du Loup is interested in acreage in South Gaspe.

New Brunswick Test

In the province of New Brunswick, an important test is being drilled by New Brunswick Gas & Oil Fields, Ltd., about midway between the Stoney Creek Field and Moncton. The new well, which has attained considerable depth, is planned to test the possibility of an extension of the field in this direction.

Drilling has been active in the New Brunswick fields for upwards of 25 years. Shallow oil production was at one time developed between the tidal waters of the Petitcodiac and Memramcook Rivers. This did not hold up, but in the effort to extend the oil field, the pioneer operators opened the Stoney Creek gas field in Albert County. Gas from this field has been piped to Moncton and Hillsboro, being distributed in the former city by the Moncton Tramways Co. The company has carried on a systematic program of drilling a few new wells each year and deepening oil wells, with a view to maintaining its supply of gas for these markets. There has, also, been a small incidental production of crude oil, chiefly collected by drips from the gas wells. In some of the gas wells, deepening has secured production from as many as four sands.

Some wildcat drilling was done several years ago by D'Arcy Exploration Co., subsidiary of the Anglo-Persian Oil Co., under arrangement with New Brunswick Gas & Oil Fields, Ltd., which holds an exclusive concession from the provincial government. The Anglo-Persian tests were, however, unsuccessful in opening new producing areas. The wildcat test now being drilled by the New Brunswick company may be completed this fall and is primarily undertaken in the hope of tapping a new gas area.

Nova Scotia Drilling

Imperial Oil, Ltd., last summer completed its drilling program in the province of Nova Scotia, and no further work is contemplated in the immediate future. Previous to the commercial tests, considerable structure testing was carried on, and good structural conditions were determined in a number of areas.

Imperial's No. 1 test was drilled at Scotsburn in Pictou County, not far from Truro. This test was carried to 1,950 feet and encountered a 10-foot sand impregnated with oil and closely resembling the albertite formation in New Brunswick. A feature of this test was the drilling through a lava formation and the test also encountered a deposit of volcanic ash.

No. 2 test was drilled near Amherst and considerably closer to the New Brunswick fields. This test encountered alternations of salt and gypsum and was finally abandoned at 4,134 feet without reaching the potential petroliferous horizons.

The two tests, though commercially unsuccessful, disclosed a great deal of geological information and threw considerable new light on geological conditions in Nova Scotia. A striking feature was the fact that No. 1 test in Pictou County, which was furthest distant from the New Brunswick Field, encountered geological conditions most nearly approaching those in New Brunswick, while the deeper test drilled at Amherst within a short distance of the New Brunswick

Field failed to reach the New Brunswick formations. The latter are apparently deeply buried in the Amherst area, and while production might be secured by very deep drilling, the cost of a test sufficiently deep would be prohibitive under existing conditions.

GAS MIXTURES, THEIR SELECTION, UTILIZATION

(Continued from Page 42)

foot affects the B.t.u.'s delivered through the burner. The air required for combustion is almost proportional to the heat units delivered in the gas. An increase in heating value of the gas above that of the adjustment gas will tend toward soft flames and possibly incomplete combustion and a decrease in the heating value of the gas will tend toward hard flames and possibly flashbacks.

Since the flow of two gases through an orifice is inversely proportional to the square root of the gravities of the gases, an increase in gravity will mean a decrease in flow through the orifice. The primary air entrained is proportional to the momentum of the gas stream and therefore for the same pressures and same gas orifice remains relatively constant. This means that an increase in specific gravity will tend toward harder flames and possibly flashbacks and a decrease in gravity will tend toward softer flames and possibly incomplete combustion.

Flame Characteristics

The chemical composition of the gas will also affect its flame characteristics. Hydrogen is much faster burning than any of the other gases. Methane and ethane, for instance, are slow burning. The illuminants and carbon monoxide occupy a position between the paraffins and hydrogen, being closer to the paraffins in their rate of flame propagation. Other things being equal, a gas containing a large amount of hydrogen such as blue gas or coal gas will be fast burning while a gas low in hydrogen or high in methane, such as natural gas, will be slow burning.

Certain gases are inherently more suitable for base gas than for peak gas, notably coal gas, by virtue of the character of the production equipment, and natural gas, by virtue of the limit in transportation facilities. Other gases are comparatively more suitable for peak production, notably blue gas, carburetted water gas, oil gas, butane or butane enriched gases.

The base gases in normal use are coal gas, carburetted water gas, oil gas, reformed gas, natural gas, or mixtures of natural gas with either blue gas, carburetted water gas or coal gas.

The peak gases are normally blue gas, carburetted water gas, oil gas, butane or butane enriched gas.

Base and Peak Gas

The selection of a base gas involves a study of the cost of materials and the cost of converting these materials into a gas suitable for distribution.

The same factors affect the selection of a peak gas. Now it may be that the most economical base gas considered solely from a production standpoint cannot be used since it is of a character such that the peak gas necessary would be too costly and conversely the most economical peak gas from a production standpoint may be entirely unsuitable for mixing with the gas to be augmented. We must, therefore, study out and select the most economical from the workable combinations for the base and peak gases.

Generally speaking, base gases may require high investment costs but should demand low material and conversion costs per 1,000 cubic feet. Peak gases should require low investment costs but may demand high material and conversion costs per 1,000 cubic feet. The ratio of these costs varies with almost every situation, depending not only upon the investment cost, the materials and conversion costs, but also upon the character of the load and its effect on the amount of peak gas produced.

The problem of actually mixing gases after they are produced has been satisfactorily solved by several equipment manufacturers.

The problem of selecting and proportioning the use of various kinds of gases is a separate problem to be solved for almost every particular situation. Once certain tentative conclusions have been reached, actual tests of the various base, peak and other mixtures should be tried out on the various appliances in general use for that particular situation and then the proposed mixtures should be further modified to secure the best all around operating and utilization results.

I shall not, therefore, endeavor to do more than to point out the few fundamental ways in which we may modify for a few particular cases.

You will note in Table No. 1 a list of the various gases commonly available for mixing. The problem in the past was rather simple—the load permitted either coal or carburetted water gas to be the selection, depending upon local economic conditions.

During recent years the development of the various heating loads, house heating, water heating, industrial, etc., has resulted in increasing maximum day sendouts. In some instances the maximum day may be in excess of three times the average summer day sendout. With coal gas for the base load equal to the average summer day sendout, it is now necessary not only to thoroughly mix the coal and carburetted water gas but to find out what, if anything, can be done to modify these mixtures to better suit our requirements. With our 530 B.t.u. and lower heating quality standards, we can greatly improve conditions by using as much producer gas as possible with the coal gas for increasing its gravity during the summer season. Other modifications have been developed as shown in the following problems:

Modifications Shown

Problem A. Given a coal gas base at 530 B.t.u. or lower, equivalent to the average summer day sendout and with extreme peak load three to four times this average summer day. What modifications can be made to improve the mixtures?

1. The gravity of the coal gas base can be kept relatively high during the low sendout season by (a) the addition of producer gas, or (b) the addition of blow run blue or carburetted water gas.

2. As the load develops, increase the use of carburetted water gas, reduce progressively and finally omit the producer and blow run gases.

3. During extreme peak day sendouts (a) operate some or all carburetted water gas sets to produce a gas of lower gravity than normal; (b) operate all carburetted water gas sets to produce a higher B.t.u. quality than the standard.

Large quantities of natural gas and refinery oil gas are becoming available for use in combination with manufactured gas. Usually not sufficient of either or both of these gases is available for straight distribution, or for enrichment of blue water gas for the entire peak load sendout. Some coal gas may or may not be available for the base load. Where natural and refinery oil gases are available they may be utilized in several ways but primarily for enrichment purposes.

Natural Gas Use

We may consider the simple problem:

B. Present gas all the year round is carburetted water gas of 530 B.t.u. quality and about .66 gravity. Natural gas becomes available for enrichment.

1. For base load conditions, operate the carburetted water gas plant with some blow run for blue gas production and use the natural gas for enrichment.

2. For greater loads including peaks, use natural gas for part enrichment on top of carburetted water gas with reduced blow run to stretch out the peak demands. Keep the mixtures and gravities within the limits found by tests to be satisfactory.

B$_1$. Present gas mixture is coal and carburetted water gas ranging from .55 gravity to .61 gravity. Natural gas be-

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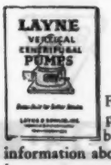

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comes available for enrichment; coal gas plant to be shut down.

1. Operate the carburetted water gas plant as a blue gas plant using natural gas for enrichment. Determine what blow run, if any, can be used and if appliances must be readjusted.

2. If there is a surplus of natural gas available for summer use, consider and test out possible use of a combined reformed blue and producer gas enriched with natural gas.

3. Use natural gas for part enrichment on top of carburetted water gas to stretch out for the peak to the full extent that natural gas may be available.

Refinery Oil Gas

B_r. Same as B_1 except refinery oil gas becomes available for enrichment.

1. Operate carburetted water gas as a blue gas plant, use refinery oil gas for straight enrichment.

2. If refinery gas is available in large quantities, determine amount of oil gas that can be used for reforming, or

3. Readjust appliances to a lower gravity gas to be selected and use a combined reformed-blue gas-blow run on base enriching with refinery oil gas.

B_r. Same as B_1 except refinery oil gas rather than natural gas becomes available for enrichment.

1. Use blue gas made on carburetted water gas sets and enrich with refinery oil gas. Determine by test what readjustment of appliances is necessary.

2. If refinery oil gas is available in large quantities consider the reforming of some refinery oil gas. This may obviate the necessity of making a general readjustment of appliances.

3. For extreme peaks stretch out with refinery oil gas for enrichment on top of carburetted water gas, reforming some refinery gas to the extent shown by tests as desirable to keep the gravity of the mixed gas within the required limits.

It may seem to those who have not studied the problem seriously that so much care is not necessary in testing out just what can be done say on present adjustments of appliances, or on some readjustment using a different or modified base gas.

Variations

Perhaps some of the variations can be made clearer by showing the variations in the quick burning gases and the changes in gravities. Take, for instance, Problem "C," a 600 B.t.u. carburetted water gas base as normally produced of .68 gravity. If we substitute natural gas for enrichment using a normal blue gas for the base the gravity is reduced to .62 and at the same time the quick burning hydrogen gas will be decreased by 10 per cent. It will be found that the flames will be too soft without a readjustment of the appliances. The natural thing to do then is to determine the modifications that can be made in the base blue gas and the extent to which natural gas can be used as a partial enricher without readjustment of appliances, and whether or not this modified operation will be as economical and satisfactory as readjustment with a larger use of natural gas for enrichment on the base load operation. Then too consideration must be given to the top limit of natural gas for peak load use. For instance, if a readjustment were made on a .62 gravity blue and natural gas mixture, would operations be satisfactory on a partial enrichment and gravities running up to .66? If the natural gas failed, could the original carburetted water gas of .68 gravity and 10 per cent more hydrogen be satisfactorily utilized by the appliances now in adjustment for the .62 gravity blue and natural gas?

B.t.u. Limit

I will mention one more problem as indicating the trend in some of the larger cities. Large supplies of natural gas and of refinery oil gas are available. Large amounts of coal or coke oven gas must be used for the base or summer load.

The plants and conditions may be such that all of the various gases cannot be brought to a central point for mixing.

The appliances in service, designed for use with manufactured gas, will not tolerate too high a B.t.u. standard without an extensive replacement of appliance burners. What is this B.t.u. limit? Tests seem to indicate that it is about 700 to 750 B.t.u. but different conditions may cause some variation from this limit.

Let us assume that a 700 B.t.u. standard is tentatively selected for distribution.

Problem D. Coal gas of about Analysis 4, Table No. 1 is available for summer and winter use in about a constant quantity. Large supplies of natural gas, Analysis 14, of Table No. 1 and of refinery oil gas, Analysis 12, Table No. 1, are available for enriching. Producer gas, Analysis 1, blue gas, Analyses 2 and 3, and carburetted water gas, Analysis 6, Table No. 1, are available from the water gas plant for modification and for mixing.

(a) Is the standard selected for the mixed gas likely to be the most satisfactory for the situation as a whole, keeping in mind that the present appliances are the type designed for manufactured gas of 530 to 600 B.t.u.?

(b) What base gases or mixtures may be used to the best advantage for the summer load? Assume that the plant conditions are such that the natural and refinery oil gases may not be available at a common location.

(c) Can the load be satisfactorily augmented with an increased use of natural and refinery oil gas if these gases are to be mixed with coal and carburetted water gas?

Standard of Quality (a). Assume that the original decision to distribute 700 B.t.u. is sustained by appliance tests, a higher quality not being justified due to the extensive appliance changes required.

Base Gas Mixtures (b)—700 B.t.u. gas.

1. Top the coal gas, Analysis 4, Table No. 1, with natural gas, Analysis 14, Table No. 1, to 700 B.t.u. The mixture shown in Analysis 1, Table No. 2, will contain about 67 per cent coal gas and 33 per cent natural gas and be of about .46 specific gravity.

2. For modifying "1" use the producer gas shown in Analysis 1, Table No. 1. A gas containing 39 per cent coal gas, 15 per cent producer gas and 46 per cent natural gas, as shown in Analysis 3, Table No. 2, might be obtained of about .57 specific gravity.

3. For modifying "1" use the 250 B.t.u. blue gas, Analysis 3, Table No. 1. A gas containing 39 per cent coal gas, 17 per cent blue gas and 44 per cent natural gas as shown in Analysis 4, Table No. 2, might be obtained of about .53 specific gravity.

4. Top the coal gas, Analysis 4, Table No. 1, with refinery oil gas, Analysis 12, Table No. 1, to 700 B.t.u. This mixture shown in Analysis 2, Table No. 2, will contain 86 per cent coal gas and 14 per cent refinery oil gas and be of about .46 specific gravity.

5. For modifying "4" use the producer gas shown in Analysis 1, Table No. 1. A gas containing about 65 per cent coal gas, 15 per cent producer gas and 20 per cent refinery oil gas, as shown in Analysis 5, Table No. 2, might be obtained of about .57 specific gravity.

Peak load mixtures (c) 700 B.t.u. quality.

6. The peak load gas produced at one plant might be 15 per cent coal gas, 35 per cent natural gas and 50 per cent carburetted water gas as shown in Analysis 6, Table No. 2 of about .60 specific gravity.

7. The peak load gas produced at the other plant might be 10 per cent coal gas, 15 per cent refinery oil gas and 75 per cent carburetted water gas as shown in Analysis 7, Table No. 2, of about .67 specific gravity.

Selection of Base Gas

When we have determined that gases such as Analyses 6 and 7 of Table No. 2 will be the peak gases, we can then select the base gases which will be most satisfactory.

The simple mixtures of coal gas and natural or refinery oil gas shown in Analyses 1 and 2, Table No. 2, will obviously be unsatisfactory. The variation in gravity from .46 to .67 or 45 per cent is entirely beyond the allowance of satisfactory burner performance and while the hydrogen is comparatively high in these gases the hydrocarbons are also high;

there is insufficient change in chemical composition to compensate for extreme change in gravity. These base gases, Nos. 1 and 2, Table No. 2, may then be eliminated as unsatisfactory.

Now examining gas No. 3, Table No. 2, we see that the gravity range, .57 to .67 or 17.5 per cent, is within the normal allowance of satisfactory burner performance, the hydrogen content of 22.7 per cent, together with the high inerts and methane, would tend toward a slow burning gas which might also blow to some extent.

The blue coal natural gas mixture of Analysis 4, Table No. 2, offers more promise. While the specific gravity variation of .53 to .67 or 26 per cent is rather high it is not greatly in excess of that of gas 3. The increased amount of hydrogen in this gas 4 over gas 3 and the decrease in inerts will aid in obtaining a fast burning flame. We would conclude, bearing in mind some tests with which we are familiar, that gas 4 would be more satisfactory than gas 3.

The coal gas, refinery oil gas, producer gas shown in Analysis 5, Table No. 2 of .57 specific gravity will obviously be satisfactory for a base gas since the gravity variation is not excessive and the changes in chemical composition between this and the peak gases are not excessive.

We would then select gases 4 and 5 for base gases, as the load increased the blue or producer gas used for modification would be replaced first by better quality blue gas, then by gradually increasing quality carburetted water gas until the gases shown in Analysis 6 and 7, Table No. 2, were finally produced as extreme peak gases.

Having selected these four gases for trial we would check our conclusions regarding appliance performance in the laboratory. We would endeavor to use such appliances for testing as most nearly represent those in service in the territory. Any slight changes to the proposed base or extreme peak gas which might be advisable would be emphasized in these laboratory tests so that better base and peak gases would be chosen and we would know the practical limits within which we could operate our plants before any changes were made.

LEGAL

Sale of Oil and Gas Lease, Department of the Interior, Monroe, Louisiana. Notice is hereby given that the following described land in one unit in the known geologic structure of the Monroe Gas Field, Louisiana, is offered for lease under Sec. 17 of the act of February 25, 1920 (41 Stat. 437), at the customary sliding scale of 12½% to 33⅓% of the quantity or value of the oil produced, of 12½% to 16⅔% of the value of the gas produced, and of 16⅔% of the value of the natural gas gasoline produced, in accordance with the royalty schedule in the regular lease form, and the rental as required by Sec. 17 of the said act: T. 19 N., R. 5 E., Sec. 10, SE¼ SE¼, 39.82 acres; T. 20 N., R. 5 E., Sec. 34, SE¼ SE¼, 40.07 acres; Louisiana Meridian, Louisiana. The lessee will be required to proceed with reasonable diligence to install standard or other efficient drilling outfits and equipment and within three months of delivery of the executed lease to commence drilling one well on each tract of the leasehold. The drilling of each well shall be continued with diligence to production, and thereafter produced, or to a point where the well is demonstrated unsuccessful; and if any well be demonstrated unsuccessful additional wells shall be drilled in lieu thereof until one productive well shall be drilled on each tract or the tract proved barren. Neither more nor less than one productive well shall be drilled on any tract without consent in writing first obtained from the lessor. Beginning with the fourth calendar month after delivery of the lease and continuing until production on nearby lands shall have been fairly offset by production on the leasehold, the lessee shall pay a sum of each tract estimated to reimburse the United States for current loss of royalty therefrom through drainage, the amount of such reimbursement to be fixed monthly by the supervisor of oil and gas operations, subject to the right of appeal to the Secretary, provided that during the last nine months of the first year of the lease such sum is hereby fixed at $25.00 per tract per month. Said lease will be offered for sale by public auction at the west entrance to the Post Office Building, Monroe, Louisiana, at 10 A. M. on January 30, 1932. The successful qualified bidder must deposit on the date of sale with the officer in charge of the sale certified check on a solvent bank, or cash, for one-fifth of the amount bid by him, and file the showing of qualifications to receive a lease required by Section 15 of said regulations. Bidders are warned against violations of the provisions of Section 59, U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any or all bids in the discretion of the Secretary of the Interior. James W. Neal, Officer in Charge.

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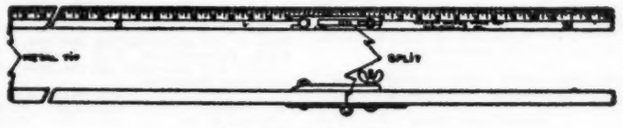

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Oklahoma-Kansas and Eastern Pipe Line Report

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Gulf P. L. Co.	1,470,856	47,447
Texas P. L. Co.	585,619	18,923
Magnolia P. L. Co.	1,383,175	44,618
Empire P. L. Co.	2,221,054	71,647
Cosden P. L. Co.	615,323	19,946
Stanolind P. L. Co.*	2,790,000	90,000
Oklahoma P. L. Co.	2,194,600	70,794
Other lines	4,154,000	134,000
Total October	16,133,640	520,440
Total September	11,369,689	378,990
Difference	4,763,951	141,450

Shipments

Prairie P. L. Co.	3,045,351	98,237
Gulf P. L. Co.	1,716,665	55,376
Texas P. L. Co.	846,358	27,302
Magnolia P. L. Co.	1,269,347	40,947
Empire P. L. Co.	2,271,402	73,271
Cosden P. L. Co.	721,801	23,284
Stanolind P. L. Co.	3,652,032	117,162
Oklahoma P. L. Co.	1,940,886	62,609
Other lines*	4,557,000	147,000
Total October	20,000,828	645,188
Total September	20,049,659	669,654
Difference	48,831	24,466

Stocks

Prairie O. & G. Co.*	35,816,000
Gulf P. L. and Gypsy Oil Co.	7,669,159
The Texas Company	2,720,270
Magnolia Petroleum Co.	7,049,502
Empire P. L. Co.	3,441,230
Mid-Continent Petroleum Corp.	3,296,916
Stanolind Crude Oil Pur. Co.*	15,170,000
Oklahoma P. L. Co.	1,280,706
Carter Oil Co.	6,825,688
Other lines*	14,911,500
Total October	98,180,971
Total September	98,657,494
Difference	477,466

*Estimated. Shipments include a considerable quantity of Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF NOVEMBER

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for October and November:

	Oct., 1931	Nov., 1931
Nat. Transit	154,511.51	124,750.97
S W Pa. P. L.	79,162.91	74,098.69
Eureka P. L.	321,800.33	283,984.98
Buckeye P. L. (Macksburg)	282,641.28	257,058.99
Buckeye P. L. (Cleveland)	12,576.07	12,136.62
Buckeye P. L. (Lima, etc.)	85,128.77	66,302.98
Indiana P. L.	2,649.84	2,833.85
N. Y. Transit	36,513.13	37,877.10
Tide Water P. L.	23,220.70	23,526.84
Pure Oil	313,613.79	294,109.73
Stoll Oil Ref.	69,655.93	77,377.78
Bradford Tran.	476,204.68	396,444.21
Ashland Ref.	144,886.55	144,095.48
Total	2,002,475.44	1,794,597.72
Daily average	64,595.98	59,819.92

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for October and November:

	Oct., 1931	Nov., 1931
Nat. Transit	582,867.42	555,055.73
S W Pa. P. L.	479,783.62	353,585.85
Eureka P. L.	354,253.27	270,980.17
Buckeye P. L. (Macksburg)	284,152.11	228,820.83
Buckeye P. L. (Cleveland)	1,712.38	1,715.98
Buckeye P. L. (Lima, etc.)	1,712,258.64	1,702,435.58
Indiana P. L.	856,217.10	754,554.80
Southern P. L.	69,625.59	70,467.39
N. Y. Transit	191,559.68	192,298.27
Northern P. L.	168,179.98	161,356.84
Tide Water P. L.	516,207.68	424,477.09
Pure Oil	268,733.25	394,500.51
Bradford Tran.	559,039.51	413,554.01
Tuscarora	346,805.63	266,328.33
Ashland Ref.	144,886.55	112,425.92
Total	6,535,782.71	5,892,757.31
Daily average	210,831.70	196,425.24

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of October and November:

	Oct., 1931	Nov., 1931
Nat. Transit	672,029.18	695,594.17
S W Pa. P. L.	435,631.21	415,253.99
Eureka P. L.	1,162,617.18	1,207,018.46
Buckeye P. L. (Macksburg)	307,630.56	284,226.29
Buckeye P. L. (Cleveland)	36,248.81	46,414.61
Buckeye P. L. (Lima, etc.)	2,659,895.96	2,616,930.98
Indiana P. L.	551,521.77	561,296.24
Cumberland P. L.	64,611.76	64,408.44
Southern P. L.	233,968.56	183,750.86
N. Y. Transit	99,292.01	111,520.13
Northern P. L.	360,534.94	328,199.83
Tide Water P. L.	1,015,782.92	941,847.74
Pure Oil	556,871.54	481,451.24
Tuscarora	11,658.70	11,135.10
Bradford Trans.	366,399.51	328,694.79
Ashland Ref.		552,449.50
Total	8,417,694.91	8,830,386.37
Decrease	74,736.52	
Increase		412,681.46

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of October and November, showing gross stocks of the above fields:

	Oct., 1931	Nov., 1931
Pennsylvania	3,031,430.00	2,961,620.03
Lima	619,693.95	602,227.52
Kentucky	75,019.27	627,465.45
Mid-Continent	4,145,615.17	4,143,909.75
Illinois		23,229.59
Michigan	545,936.53	471,933.93
Total	8,417,694.91	8,830,386.37

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1928	1929	1930	1931
Jan.	52,904	51,749	75,907	53,939
Feb.	57,002	51,833	79,256	55,163
Mar.	57,485	54,252	76,688	54,331
April	56,812	53,444	84,536	54,914
May	62,067	59,902	70,546	53,344
June	58,230	58,833	75,430	54,110
July	57,144	56,087	68,921	50,723
Aug.	57,745	56,087	64,291	51,503
Sept.	53,487	57,315	56,595	51,345
Oct.	58,100	76,093	58,179	54,595
Nov.	55,866	74,831	52,332	59,819
Dec.	52,025	74,561	53,999	

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1928	1929	1930	1931
Jan.	146,465	165,721	217,623	175,369
Feb.	167,368	159,387	224,355	183,494
Mar.	158,883	161,474	228,846	189,504
April	172,935	169,737	241,845	191,450
May	180,559	184,281	248,333	199,247
June	188,024	185,404	234,401	221,155
July	189,470	194,763	207,094	211,432
Aug.	192,853	194,946	205,506	224,166
Sept.	194,138	201,214	193,999	217,537
Oct.	176,000	191,367	157,675	210,831
Nov.	176,893	202,743	146,638	196,423
Dec.	173,572	186,257	143,001	

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1929	1930	1931
Jan.	7,596,564	12,226,045	11,831,092
Feb.	8,735,535	12,691,551	11,506,483
Mar.	9,002,058	13,247,217	11,012,142
April	8,978,172	13,233,961	11,044,437
May	8,903,560	13,052,953	10,728,239
June	8,921,275	13,396,855	9,902,349
July	9,211,565	13,268,562	9,569,849
Aug.	9,440,643	13,047,051	9,192,467
Sept.	9,443,067	12,812,018	8,492,431
Oct.	9,441,101	12,437,553	8,417,694
Nov.	9,368,538	11,851,380	8,830,386
Dec.	11,253,953	11,751,952	

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

	Bbls.
Gross stocks, Dec. 1	429,304.17
Runs from wells	446,775.79
Regular deliveries	285,258.48
Other deliveries	190,386.60

The amount of Illinois oil run by the Tide Water Pipe Co. in November was 23,526.84 bbls. Deliveries were none. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1931—		
November	470,302.63	281,258.48
1930—		
January	543,387.95	498,293.93
February	548,416.33	414,536.59
March	631,944.49	469,119.53
April	530,074.22	509,304.69
May	605,147.37	504,069.84
June	572,662.57	468,658.81
July	604,529.54	388,454.47
August	594,642.12	375,742.43
September	457,001.11	371,691.63
October	478,442.12	320,688.72
November	422,794.65	355,403.13
December	556,418.78	363,719.55
1931—		
January	468,429.04	669,573.19
February	429,284.54	461,262.85
March	424,633.33	356,662.36
April	421,814.98	282,532.61
May	433,231.80	322,512.36
June	510,805.78	320,258.13
July	520,009.28	289,215.01
August	476,623.56	393,231.06
September	492,183.83	323,012.50
October	498,124.13	325,834.91

Tide Water Pipe Co., Ltd., also delivered in November, 83,089.55 bbls. Oklahoma oil.

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
December	21,419	14,033	122,774	32,839	33,774	224,839	6,290	10,613	2,097	290	19,290	244,129
January	17,613	13,519	154,225	32,902	30,612	248,871	2,032	11,677	2,097	3,097	18,903	267,774
February	31,321	16,929	127,786	31,714	26,857	234,607	4,536	11,571	....	536	16,643	251,250
March	27,645	18,935	141,160	26,290	21,129	235,161	4,065	2,580	....	1,968	8,613	246,774
April	35,000	10,533	105,000	29,767	35,533	215,833	2,733	3,400	....	....	6,133	221,966
May	30,129	8,774	107,000	25,452	26,710	198,065	....	2,000	....	....	2,000	200,065
June	30,067	10,533	111,767	27,000	20,833	206,500	3,300	5,500	2,167	1,333	12,300	212,800
July	26,387	11,226	104,678	29,323	21,773	193,387	6,903	7,419	4,194	....	18,516	211,903
August	32,613	15,581	91,742	22,387	25,741	188,064	4,161	2,516	....	3,162	9,839	197,903
September	37,067	7,267	106,867	20,099	22,967	184,267	4,833	3,333	....	....	13,166	197,433
October	53,710	14,484	100,774	26,742	40,645	236,355	6,097	6,871	2,097	1,838	16,903	253,258
November	48,033	28,800	51,667	28,600	12,967	170,067	3,933	10,833	3,033	1,367	19,166	189,233

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
December	5,516	4,323	30,645	9,678	3,580	53,742	....	....	....	....	4,645	58,387
January	8,387	6,613	21,968	14,678	11,096	62,742	....	....	....	....	6,129	68,871
February	5,787	2,713	29,143	4,000	5,750	47,393	....	....	....	....	3,750	51,143
March	10,032	1,611	21,388	7,324	8,774	49,129	....	....	....	....	6,355	55,484
April	5,133	....	19,200	16,500	10,067	50,900	....	....	....	....	4,000	54,900
May	4,452	3,064	15,903	11,226	6,258	44,903	....	....	....	....	2,355	47,258
June	4,267	....	25,100	6,333	3,500	39,200	....	....	....	....	....	39,200
July	6,774	1,194	24,512	11,065	9,902	53,548	....	....	....	....	1,335	54,903
August	3,452	....	16,419	7,419	4,290	31,580	....	....	....	....	968	32,548
September	4,267	3,667	12,933	4,699	7,367	32,933	....	....	....	....	4,000	36,933
October	2,355	1,129	19,290	16,709	9,323	48,806	....	....	....	....	3,323	52,129
November	1,000	....	22,800	11,567	....	35,367	....	....	....	....	3,366	38,733

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1930—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
November:	Month	18,109,459	14,941,770	22,035,222	3,459,330	1,057,870	2,136,948	2,957,100	3,222,000	68,419,699
	Daily average	603,648	498,059	734,507	115,311	51,929	71,231	98,570	107,400	2,280,656
December:	Month	17,786,728	15,057,103	21,810,359	3,432,661	1,590,951	2,157,534	3,118,663	3,328,000	68,281,999
	Daily average	573,765	485,713	703,560	110,731	51,321	69,598	100,602	107,355	2,202,646
1931—										
January:	Month	16,485,738	14,850,953	20,019,212	3,422,475	1,574,955	2,135,037	2,966,142	3,274,000	64,828,513
	Daily average	531,798	479,063	645,781	110,725	50,805	68,873	95,682	108,839	2,091,565
February:	Month	14,930,932	13,531,980	18,957,571	3,241,016	1,402,492	1,981,616	2,747,024	3,129,000	60,021,631
	Daily average	533,248	483,285	677,057	119,322	50,089	70,772	98,108	111,750	2,143,629
March:	Month	16,364,842	16,627,687	22,453,619	3,498,598	1,469,245	2,061,576	2,898,035	3,374,000	68,747,602
	Daily average	527,898	536,377	724,310	112,858	47,395	66,502	93,485	108,839	2,217,665
April:	Month	15,803,541	16,815,990	26,887,717	3,281,880	1,412,220	2,008,021	2,901,870	3,273,000	72,384,239
	Daily average	526,785	559,255	896,257	109,396	47,074	66,934	96,729	109,100	2,412,868
May:	Month	16,448,960	17,333,867	28,708,684	3,341,366	1,446,274	2,232,568	3,098,419	3,190,000	75,800,138
	Daily average	530,612	559,157	926,086	107,786	46,654	72,018	99,949	102,900	2,445,166
June:	Month	15,641,436	16,678,200	29,139,833	3,175,440	1,344,450	1,850,511	2,986,200	3,166,000	73,982,070
	Daily average	521,381	555,940	971,327	105,848	44,815	61,684	99,540	105,533	2,466,069
July:	Month	16,093,322	16,467,789	33,827,213	3,090,762	1,287,430	1,715,730	2,905,909	3,341,000	78,729,155
	Daily average	519,139	531,219	1,091,200	99,702	41,530	55,345	93,739	107,774	2,539,650
August:	Month	15,668,984	9,678,510	32,279,816	3,148,887	1,165,445	1,584,444	2,807,143	3,167,000	69,500,229
	Daily average	505,451	312,210	1,041,284	101,577	37,595	51,111	90,553	102,161	2,241,943
September:	Month	15,180,610	7,920,830	28,981,525	3,181,770	1,138,330	1,641,384	2,761,230	3,632,000	64,417,729
	Daily average	506,020	264,361	966,051	105,059	37,944	54,713	92,041	121,067	2,147,397
October:	Month	15,651,983	13,951,893	30,725,173	3,177,066	1,172,389	1,822,255	2,797,597	3,900,000	72,196,356
	Daily average	504,903	417,803	991,134	102,486	37,819	58,782	90,247	125,807	2,328,975
Total 12 months		194,166,535	172,866,572	315,825,944	39,531,251	16,562,101	23,327,624	34,945,332	40,096,000	837,321,359